

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—22ND YEAR.

SYDNEY, SATURDAY, JANUARY 12, 1935.

No. 2.

Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—	PAGE.	OBITUARY—	PAGE.
An Address, by GERALD WEIGALL, M.B., B.S.	37	Otto Folin	69
"Tuberculous Meningitis in the Adult, with Special Reference to the Mechanism of the Symptoms", by ALLAN S. WALKER, M.D., Ch.M.	40	Eric Jeffrey	69
"An Attempt to Propagate Poliomyelitis Virus in the Developing Egg", by F. M. BURNET	46	Sydney Sargent Merrifield	71
"Osteomyelitis", by DAVID IMRIE FITZPATRICK, M.B., B.S., F.R.C.S.	48	POST-GRADUATE WORK—	
"The Relationship of Allergy to the Autonomic Nervous System", by SYDNEY PERN, M.R.C.S., L.R.C.P.	49	Post-Graduate Courses in Sydney	71
LEADING ARTICLES—		CORRESPONDENCE—	
District Nursing in Sydney	53	The Eric Jeffrey Prize	71
CURRENT COMMENT—		Donors for Blood Transfusion	72
Recurrences in Pneumonia	54	Allergy in Oto-Rhino-Laryngological Practice	72
Cysticercosis	55	Hospital Practice in New South Wales	72
ABSTRACTS FROM CURRENT MEDICAL LITERATURE—		Drug Advertisements	72
Therapeutics	56	Mortality from Appendicectomy	72
Neurology and Psychiatry	57	PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—	
BRITISH MEDICAL ASSOCIATION NEWS—		New South Wales	73
Annual Meeting	58	Queensland	73
Scientific	65	CORRIGENDUM	73
		BOOKS RECEIVED	73
		MEDICAL APPOINTMENTS	73
		MEDICAL APPOINTMENTS VACANT, ETC.	74
		MEDICAL APPOINTMENTS: IMPORTANT NOTICE	74
		EDITORIAL NOTICES	74

An Address.¹

By GERALD WEIGALL, M.B., B.S. (Melbourne),
President of the Victorian Branch of the British Medical Association.

AN address should not only be valedictory and complimentary, it should also be informative. But how can a general practitioner inform a room full of gentlemen who are all specialists in their own department, on the subject that interests them most—their own specialty—when they all know more than he does on that subject? It may be presumption on my part to attempt to do so, but I do think there is one point which forty-two years' work among sick people has taught me.

¹ Read at the annual meeting of the Victorian Branch of the British Medical Association on December 5, 1934.

Specialists and modern teaching are focused on disease. Disease is identified and classified and treated with a painstaking thoroughness that compels the admiration of those intelligent enough to understand their motives, and the envy of those whose ignorance of pathology and technique leaves them powerless to advise or criticize.

But much ill-health is due not to disease but to disordered functions. How impossible it is to draw a hard and fast line between the so-called "organic" and "functional" diseases I have felt for many years; and the subject of this address was in my mind before the recent visit of Professor Barr. His lectures appeared to me to supply the necessary scientific data to support the clinical observation. From these lectures I learned:

1. The far-reaching effects of faulty function in the parathyroids; for instance, producing by their over-action generalized *osteitis fibrosa cystica*, or by their failure, tetany.

2. The fact of the relative interdependence of these ductless glands on each other.

3. The fact that the pituitary and the adrenals have a most important part to play, not only in the value of their contribution to the blood stream, but as a stimulant to the thyroid and probably parathyroid.

4. That the adrenal and thyroid are undoubtedly gravely affected by psychic stress or trauma.

And so arises a larger conception of ill-health. No longer must the medical adviser copy the methods of the motor mechanic and attribute all troubles to a faulty part which needs attention, but rather ask himself is this machine being properly driven and, if not, can I give advice which will make the journey pleasanter and enable it to be carried on without disaster?

It is here that the value of what I feel is fast becoming the old-fashioned type of doctor comes in. Disordered function often is associated with disease and is responsible for the fact that the patient feels ill and goes to a doctor for the reason that actuates most people when they do so: that they feel ill and want to feel better. In a previous generation the patient had a family doctor, a man in whom he could trust to advise him in his best interests. That man might have no great or special knowledge of any one subject, but he could make careful clinical examinations and he knew his patient, his habits, his worries, his weaknesses and his means.

There is growing up a feeling that he can easily be dispensed with, and the patient feels that he (the patient) has sense enough to know what organ is troubling him and to go direct to the specialist who treats the diseases of that organ.

The specialist, for his part, feels the course is clear-cut. Here is a patient, with headaches, a stuffed-up nose and a diverted septum and he feels ill. No wonder—"Let us irrigate his antrum, give him a nasal spray and straighten his septum". All this is admirably done and the patient leaves hospital with the congratulations of surgeon, nurses and friends on his correctly aligned septum and efficient airway. But in a few weeks after resuming work, and often before he has discharged his obligations to the surgeon, his headache returns, his eyes ache, he is too tired to read or even go to the pictures. He becomes cross and irritable and low-spirited, telephone numbers are indistinct, and it is at last clear to him that he made a mistake. It is his eyes. The oculist finds a small error of refraction and a marked photophobia. He corrects the error and gives Crooke's number 2 to relieve the photophobia.

The glasses are a great comfort to him. He can read much better and the headaches are not so intense. But he still feels tired, due, he feels sure, to his hæmorrhoids, which have been very troublesome of late. He knows where to go to get them injected, and he does. They shrivel up, with consequent relief of his symptoms, but he still feels ill and wretched. In desperation he goes to what

should have been his first refuge, the family doctor, for a nerve tonic (his own idea). For the first time he gets a complete overhaul, which reveals high blood pressure, exaggerated reflexes, enlarged, tender liver and gall-bladder, dirty tongue, and some dead teeth. Inquiry elicits that business has been more than usually worrying, that he has not been able to take a holiday for some years and that all that keeps him going and enables him to eat his dinner is whisky before and at it. He feels too tired to play golf or take any exercise, and that in consequence he has become very constipated and troubled with indigestion of late. The urine has a trace of sugar. The general practitioner, who knows all the family affairs, is emphatic and rings up the patient's wife, and with a knowledge of his means and tastes, orders an appropriate out-of-door holiday with exercise, surfing, fishing, golf and what-not. No stimulants, no more operations and no medicine, but some saline aperient; but before he goes he must get a clear X ray examination of his teeth and have them out. He is to come back in a month.

The first thing the doctor notices is that the glasses are gone. Yes, the patient found he did not need them after the first week's surfing. He had also left off spraying his nose. It never bothered him after he left town, and the exercise and fruit cured his constipation. The sugar is absent from his urine. In other words, proper nervous control has restored function, which is quite capable, when efficient, of compensating for slight departures from normal structure and eliminating disease.

The point I am trying to stress is that very few people, patients or doctors, could expect to pass through the intense and thorough methods of investigation now carried out by highly trained specialists without failing to be up to normal standard in function or structure in some respects; and considerable deviation from normal figures in such things as blood sugar, blood pressure, metabolic rate, hypothyroidism or hyperthyroidism, hyperacidity *et cetera*, and the possible combination of these is often most baffling.

But the question must be answered by somebody, and I think that somebody should still be the general practitioner. It is he who must decide how much this particular and interesting finding has got to do with the patient feeling ill. For, after all, that is what is troubling him. To what extent is it going to shorten his life, for that is what you are responsible for? Finally, and most important, will an attempt to remedy the condition, whether by drastic alteration of diet, habits and occupation, or by surgical interference, have made such a definite and decided improvement in his condition as to warrant advising it. I recently had such a case.

A woman of forty-two developed some curious skin condition in her fingers. She went to a dermatologist, who tested her with various pollens *et cetera*, because she told him she was a florist. He told her, as a result of these tests, that she must give up having anything to do with flowers and abandon her business. She was hypersensitive to pollens. She was advised by a friend to come

to see me. She was in great distress. All her savings had been put into the business, which by her hard work and enthusiasm was just beginning to pay its way. She loved her work and could think of nothing to do if she abandoned it. I found she was at the menopause, menstruation was irregular and she gave the typical clinical picture of tingling, flushing, irritability and depression and, above all, sleeplessness.

I drew a bow at venture and told her her troubles were normal at her time of life, that they were due to faulty nervous control and unconnected with her business, which she could continue. I gave her "Luminal" at night and mixed glands three times a day, and told her to keep her hands out of water as much as possible. She saw me a week later, happy and cured. She had reestablished her interest in life and was sleeping well. That was over six months ago, and she has continued well. I only saw her twice, but she rings me up frequently to say how well she and her business are.

Of course, I want to make it clear that I believe in the man who said she was hypersensitive to pollens, but what I want to say is that that was a symptom of her illness, not the cause of it. The cause was a hypersensitiveness to everything, due to worry and want of sleep and fear of losing her occupation and livelihood.

One of the earliest examples I had of the importance of nervous control on function was years ago.

A carpenter, aged forty-five years, was sent from the country to see me for indigestion by a former patient of mine, whom I had treated for a similar condition. When I saw him he was in a very bad way, had lost weight, his food was reduced by one restriction after another to the minimum, and taking food was always followed by pain, discomfort and often vomiting. The history dated from his wife's death some six months before. I treated him for a week or so only and found that all my simple ideas were quite futile to ease him, and I sent him on to a gentleman known and respected by you all as a specialist in digestive disorders. He did all the then known digestive tests (X rays were not used for diagnostic purposes in those days) and he then told me that he was suffering from some underlying surgical condition, probably malignant, and that an exploratory operation was imperative. The patient by this time would agree to anything, and Sir George Syme came down to operate with what is called a "roving commission", to find and remove what was wrong. The most thorough search from the cardiac end of the œsophagus to the last inch of the rectum showed nothing but wasted, flabby, toneless intestine and stomach; gall-bladder and pancreas were normal. In short, we drew a blank, and it was left to me to tell the patient.

As soon as he could talk after the operation he cross-questioned me as to our findings. I told him the truth, "nothing". His first feeling was one of extreme indignation with the physician who had ordered the operation. The second and interesting part was that he said: "Well, if there is nothing the matter with me, I can eat what I like." "Certainly," I said. He demanded ordinary food at once. I kept him off it for forty-eight hours, but at the end of that time he was eating ordinary hospital diet, chicken, cauliflower and baked custard (I remember the details) with relish and interest and without discomfort. He never looked back and is, I believe, alive and well today.

The vicious circle of indigestion, worry, further indigestion and more serious worry was broken by the dramatic nervous shock of what he regarded as an unnecessary and futile operation, and indignation supplied to him the stimulus to recovery that fear had deprived him of.

Many of you no doubt will be able to recall similar, if less dramatic cases, but surely a case of this sort should make us all ask ourselves: "Is the function right before I interfere with structure?"

There is certainly one special branch of medicine in which faulty function is especially liable to be mistaken for organic disease. I refer to the problems of pseudo-angina, arrhythmia and tachycardia; and there is no department in which the general practitioner is so grateful as he is to the cardiologist. I must also add that I think an enormous amount of unnecessary fear, worry and apprehension has been caused to patients who have been told on very slight evidence by a general practitioner that they have a "weak heart". I think the public have much to be thankful for, that with the improved methods of investigation the cardiologists have been able, from their special knowledge, to reassure a patient who has lived in dread for years, and after his reassurance has been able to live a more normal life than he did before.

I would make a rather revolutionary statement: I believe that in most cases, if the general practitioner does not know whether the case is one that may end in sudden syncope and he cannot get expert advice, it is kinder to reassure the patient, even if he should subsequently drop dead, than to frighten him to years of semi-invalidism, which are probably quite unnecessary. I have heard doctors say that they preferred to be on the "safe" side; they mean "safe" to themselves, but hell to the patient.

I mean that if I had a weak heart I personally would far rather not know of it and drop dead at work than live on for some years longer as a troublesome invalid; but this is a matter that each man's conscience must decide for himself. I mention it as a matter for thought.

As I said when I started this paper, I proposed to deal with the illnesses that are due to faulty function and that come especially under the care of the general practitioner rather than those due to organic disease.

No discussion of faulty function could be considered complete if it failed to include some reference to sexual functions.

Of late years this function has been brought very much into the foreground in both lay and medical Press. Most books nowadays deal with it and speak of "the duty one owes oneself to lead a full life" and the crime of being bound by mere man-made social restrictions and conventions. The physiologists stress the value of the sex hormones and the part they play in all the glandular secretions. The psychologists speak of "repression and conflicts", of "complexes" and perversion, all due to incomplete sex life, and suggest that most of our thoughts and all our dreams centre round the "libido". Every night, in every suburb, sex experiences are portrayed in their most vivid and attractive forms at picture shows. Every book that is written nowadays does its best to outvie its predecessor in the frankness with which it discusses the question. In fact, it is impossible for anyone, however sheltered, to be ignorant of its charms, its necessity, its world-wide influence and even the dangers that its indulgence may produce.

The novelists may be right—man-made laws are not perfect. The physiologists may be right when they stress the value of sex stimulation and gratification. The psychologists may be right when they stress the dangers of repressions. But here again the general practitioner must have the last word.

The others may all be right. I do not know. But I do know that one of the most powerful factors in producing good health is self-respect and that old-fashioned attachment known as a clear conscience.

To indulge in irregular sex relations, even if it does not shock moral codes that have grown up as part of our mental equipment, involves deception, intrigue and much that is sordid and unpleasant and that carries with it risk of tragedies far greater than its advantages can possibly warrant; and where my advice is asked on this matter (and it often is) I say unhesitatingly that the risks of continence are negligible compared with those that must be run if other courses are adopted. As I have become older, I have become brave enough to strike an even higher note and definitely affirm that moral discipline is actually advantageous to the individual, that physical health is more dependent on moral contentment than on physical indulgence, that the only cure for the neurasthenic is to be found in some absolutely unselfish occupation and interest in others.

And so the puzzle of life all fits in as year follows year—that curious round trip of adventure and experience that starts in the unknown and has to finish there.

The moral axioms accepted as a child, questioned as a youth, disputed as a young man, doubted in middle age, are recognized as essentially true and everlasting as the circle nearly closes.

But what has this to do with a presidential address I can hear you thinking. Just this: that correct function is good health, that correct function means correct enervation. That this correct enervation is only got by the patient having a sane outlook on life and that it is the duty and the specialty of the efficient general practitioner to provide that outlook.

When a medical man ceases to be such a person and becomes a mere tinker that patches separate organs according to well defined rules, he will have lost his honoured place in our social scheme.

I recently heard a distinguished professor lecturing to a class of medical students. He said: "If you want to be good medical men you must have a sound knowledge of physiology and anatomy." I gladly accept that as a foundation, but more than that is required—a knowledge of humanity and a sympathy and an understanding of its weakness and, above all, a genuine desire to help your patient, to lighten his load and to carry some of his burden, and so to earn what I consider the finest compliment a patient can pay his doctor, when he regards him not only as a doctor but as a friend and a man.

TUBERCULOUS MENINGITIS IN THE ADULT, WITH SPECIAL REFERENCE TO THE MECHANISM OF THE SYMPTOMS.

By ALLAN S. WALKER, M.D., Ch.M. (Sydney),
Honorary Physician, Royal Prince Alfred
Hospital, Sydney.

TUBERCULOUS MENINGITIS is a disease that is not so barren a study as its high mortality would perhaps suggest. It is not, as often believed, an inevitably fatal malady, for proven recoveries have been recorded, as will be pointed out later; nor is it always part of a general dissemination of tuberculosis of the miliary type. This latter form is common in children and, indeed, the prevailing conceptions of the disease are based chiefly upon its manifestations in these young patients. But certain features are best observed in the adult, who is less immunologically sensitive and who displays some of the early symptoms in a much more characteristic and more readily recognizable form. A logical study of the disease must include a clear comprehension of both the known pathology and the symptoms observed at the bedside and should also attempt a reconciliation of one with the other.

Pathology.

One feature of the morbid anatomy of this form of meningitis is the comparatively slight degree of gross structural change. Pus, so strikingly apparent in the sulci of the brain in the coccal forms of meningitis, is absent. The exudate present is often slight in amount and sticky; it is found in the meshes of the pia-arachnoid, chiefly in the inter-cranial space, the Sylvian fissures and around the cerebellum. It is striking to contemplate this apparently small degree of gross anatomical damage and to contrast it with the rapid deterioration of the patient's condition in the stages immediately preceding death. In those cases in which more exudate is found, it collects especially between the *crura cerebri* and in the depths of the large fissures and basal cisterns; it is of a characteristic and highly interesting kind, thick and gelatinous and rather tenacious. This tenacity is not entirely due to its chemical characters, for there is usually a slight degree of cellular outpouring also, and the endothelial and fibroblastic cells help to anchor the membranes to the subjacent vessels and surface of the brain. Adhesions are present in varying amount, either filmy or more or less tough. In the ventricular system there is an excess of cerebrospinal fluid, for there is commonly a certain amount of block preventing free circulation below the fourth ventricle. Hydrocephalus exists in some degree in most cases, except the more acute. It is never excessive, but from the functional point of view there is definitely some ventricular distension, as evidenced by the flat and sticky gyri seen on first exposing the brain and the excess of fluid in the ventricular system. It is surprising that Collier and Adie⁽¹⁾ comment on the "absence" of hydrocephalus. Certainly there is no intermittent block, and prob-

ably no generation of fluid in prodigious quantities; nor are the Pacchionian bodies quite ineffective in the drainage of excess fluid, for Rich and McCordock⁽²⁾ have produced evidence of secondary systemic infection from the meninges by this route. But surely it is the experience of all clinicians that block does occur; a lumbar tap may be dry and a cisternal puncture yield abundant fluid under pressure.

Tubercles are always present, but seldom conspicuous. They are difficult to see in the unhardened brain and usually minute, and are best seen along the vessels at the base of the brain, in which there is frequently a reactive endarteritis (see Figure II) in addition to the presence of tubercles in the adventitious coat. This tendency for the arterial changes to be older in the outer coats of the vessels should be noted. Tubercles are also found on the ependyma, and another interesting site is on twigs of arteries as they penetrate the brain. Thrombosis and hæmorrhage may occur, and secondary softening of the brain substance follows; no doubt this is of great clinical importance. There seems to be a tendency to necrotic change of slight but definite degree, a tissue spoiling which is probably not wholly dependent upon vascular change. This is probably in part toxic, as Muir⁽³⁾ remarks in discussing the exudative and necrotic reaction. This brings us to a consideration of the nature of the peculiar gelatinous exudate. One explanation of this outpouring of highly fibrinous material is that any block in the free circulation of cerebro-spinal fluid tends to concentrate the protein, already increased in amount through enhanced permeability of the secreting cells. More important than this are two factors: the reaction is of the exudative and so-called "allergic" variety, and it is also in part specific and toxic. There is a suggestive analogy to a curious reaction that sometimes occurs in the tuberculous lung. It will be remembered that a homogeneous lesion is not uncommon which affects a rather extensive tract of lung tissue, often in the vicinity of an older lesion. This, judged by the even texture of the shadow it casts in the X ray film, is a consolidation of not very dense type and is often benign in nature. In this category also fall those pulmonary affections called "epi-tuberculous". The few opportunities that have been afforded for *post mortem* observation of these areas have shown a curious gelatinous and sparsely cellular type of exudate. This has been described and considered as an allergic reaction, and certainly it is not in itself either caseous or essentially proliferative in nature. In the meninges there is also a certain degree of necrotic change and also of proliferative reaction, varying with the age of the lesions. Probably this is more a question of the time involved than of a special type of lesion. Joukovsky and Rousskikh⁽⁴⁾ have described three forms of tuberculosis of the central nervous system in addition to the macroscopic tuberculomata. They recognize the classic type of leptomeningitis with involvement of the chorioid plexuses, a meningo-thrombotic type with thrombosis of the vessels supplying the sub-cortex,

where necrotic foci are found, and also a "mixed" type, where meningitis accompanies the formation of miliary tubercles. However, it would seem more correct to admit that all these processes are really at work in tuberculous meningitis, but the permutations vary, and with them the predominant pathological picture.

It would appear, therefore, that the pathological reactions of the meninges in tuberculous meningitis are mixed—partly proliferative with endothelial and fibroblastic cellular formation and small tubercles, but also exudative of a particular and striking type. It is now of interest to consider the mechanism by which these changes are wrought.

Mechanism of Meningeal Infection.

It has been assumed until recently that dissemination of tubercle bacilli by the blood stream was the actual cause of most cases of meningitis of tuberculous origin. The lymph stream has also been described as a vector. But while the association of definite tuberculomata with subsequent meningitis has been long recognized, it has not been generally supposed that the presence of a relatively old focus within the cranial and spinal cavities is practically universal. Yet this is probably the case.

As regards spread by lymph stream, it cannot be denied that this is possible, for this path is believed to be the usual one by which the *Spirochæta pallida* travels to the aorta and also to the spinal cord from the bronchial or mediastinal glands. Perhaps this possible route is less important in Australia, where essential gland tuberculosis is not common and where the bovine bacillary type is of less significance. In Britain the recent work of Griffith⁽⁵⁾ may be referred to, who found that one-quarter of a series of cases of tuberculous meningitis were due to the bovine type of organism, and three-quarters to the human type. He found also that the bovine meningeal infections became much less common in adult life. That bacilli travel by the blood stream is certain. Although the work of Löwenstein has not been confirmed in its entirety, blood dissemination has been proved to occur by many workers, among whom may be mentioned Penfold and Butler.⁽⁶⁾ But when the bacilli arrive in the central nervous system, what happens then? Is there a shower of tuberculous emboli that lodge in small vessels, such as those of the chorioid plexuses, thereby infecting the meninges? If this were so, we should expect to find chorioid tubercle invariably in cases of meningitis, but this is not invariably found. If not, do the bacilli reach the meninges by the meningeal vessels? Tubercle formation on the meninges, however, is usually very recent and slight in degree. And what of the tubercles on the vessels? How is it that these are characteristically found on the adventitious coat, the intima often showing more recent changes? It would seem probable that the bacilli initiating these arterial tubercles arrive from the direction of the meninges. Further, there are other difficult questions to answer. How is it that a relatively sudden "allergic" reaction is pro-

duced in the membranes, with rapid outpouring of fibrinous exudate in many cases? Why are tubercles often found in the central nervous system in cases of miliary tuberculosis without any meningeal

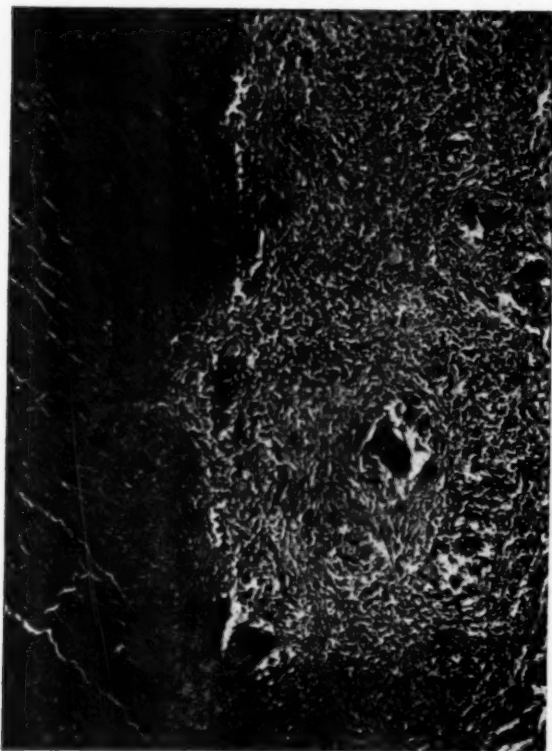


FIGURE I.

symptoms being obvious during life? And how does meningitis arise from a tuberculoma except by direct infection? This is unfortunately often seen after attempts to effect surgical removal of a cerebral tuberculoma. And lastly, how is it that experimental tuberculous meningitis has never been produced by intravascular inoculation, even when the living bacilli have been injected into the carotid artery? The only method by which a clinically and anatomically proved meningitis can be caused in animals is to introduce the infective material by sub-pial inoculation.

These questions are answered by the work of Rich and McCordock,⁽⁷⁾ who, by careful study, have demonstrated that an old focus is always to be found within the cavities of the skull or spine if a thorough search is made in cases of tuberculous meningitis. Their work is based on careful reasoning, for they argue that to explain the difficulties arrayed above we must suppose that it is common for a massive dose of bacilli to reach the membranes. This will happen if a previously inseeded lesion breaks down and discharges caseous material into the subarachnoid space. This lesion was usually found to be a small tuberculoma

or a plaque of tuberculous tissue in the superficial part of the brain or in the membranes, and Rich and McCordock specially point out that the tubercles found in the central nervous system are often not contemporaries of those found elsewhere in cases of general dissemination. Indeed, as pointed out above, they consider that other miliary infection might arise from the nervous system, for instance, through the arachnoidal villi.

In only a small series to date have I had the opportunity of carrying out a careful personal examination of brains showing the changes of tuberculous meningitis, but in only one of these have I failed to find an old focus of disease. Perhaps even in this case the search was not sufficiently thorough, for in one instance, after failing to discover a plaque of earlier vintage, so to speak, in the brain, a small softened caseous mass was eventually found in the upper part of the cord communicating with the fluid circulation. One typical lesion is illustrated in Figures I and II, the former showing a section of part of a small tuberculoma in the superficial part of the mid-brain, and the latter the characteristic reactive endarteritis.



FIGURE II.

Now it is of interest to see if the observed symptoms can be reconciled with this account of the pathology. In advance it may be pointed out that the tubercle bacillus grows slowly, that in adults in particular there is often a relatively long

latent period, and that when the final meningeal symptoms appear, they do so with startling suddenness.

Symptoms.

In a series of forty-five hospital cases taken from the records of the Royal Prince Alfred Hospital the age distribution is shown in the accompanying table, excluding all patients under fifteen years of

Table showing Age Incidence of Tuberculous Meningitis.

Age Period.	Number of Cases.
15-20	5
20-30	25
30-40	9
40-50	5
50-60	0
60-70	1

age, in the age-group in which pulmonary tuberculosis of the exudative type is most common. All these patients died, for although there were a few recoveries among the patients recorded, the proof of the nature of the disease was not complete; therefore these were excluded. The average duration of the disease was about five weeks, but one patient in this series lived four months after the onset. Probably tuberculosis of the nervous system is not rare. Perhaps it should be clinically recognized more often, as it seems so highly probable that a lung lesion may not infrequently set free infective emboli.

The one universal symptom is headache; so few symptoms are constant in medicine that this should be carefully noted. Backache, vomiting and constipation are also quite common complaints in the early stages. But as well as these the prodromata include a most interesting and significant group of symptoms that are so common in one form or another that it is probable that they are almost invariable if looked for. These are the mental phenomena. It is curious that tuberculous meningitis not uncommonly attacks people who have chronic phthisis, but who seem to be doing well or at least whose lung condition is not showing freshened activity. It is all the more striking then to observe such symptoms as lassitude, depression, moodiness, emotional and irrational states, loss of memory and power to concentrate. The temperament alters, there may be a curious dreamy state even suggesting mental alienation or drug addiction, or a diagnosis of hysteria may be suggested, especially in women. Warrington⁽⁸⁾ points out that the older writers, such as Oppenheim and Gowers, were specially struck by this change in mental state. Tillyard Holmes⁽⁹⁾ aptly points out the strangeness of manner of these patients. A speech disturbance is not uncommon, and Ochsensius,⁽¹⁰⁾ referring principally to children, describes a delirium of more or less transitory nature, often associated with a desire to speak without the capacity to do so. Among the patients whose cases or records have been studied were a number whose mental confusion was very striking. Suggestibility was noticed several times, also antagonism and suspicion

amounting even to a paranoid state. One patient showed euphoria in combination with delusions, and this state, combined with a lack of proper speech control, presented a picture like that of general paresis. Another patient was beset by fears of having this condition and was acutely anxious about her condition. Actual delirium not infrequently occurs as the patient merges into the later stage of the disease, and about this time drowsiness is also common. It cannot be too clearly pointed out that the above symptoms are relatively early and their duration is very variable; in some cases mental prodromata of considerable length occur. Following this stage there comes an abrupt transition to the late stage, when stupor and coma usher in the inevitable fatal end. Convulsions may occur, bulbar disturbances arise and all manner of focal signs also appear, such as palsies of eyes or limbs. These are never to be reckoned among the early symptoms; they are the heralds of death.

Reconciliation of Symptoms with Pathological Changes.

It would seem reasonable to attempt to correlate these clinical symptoms with the morbid anatomical findings. First it may be remarked that the presence of a tubercle of a miliary type only produces an intense reaction in its immediate neighbourhood. In addition there is, of course, the general toxic effect observed through systemic absorption, but the organ in which miliary tubercles appear is often apparently not greatly affected otherwise. Consequently we might expect that when scattered tubercles are formed in the brain there is some affection of finer function through toxic absorption, but little gross change. If, however, seepage of infected material occurs gradually from a softened focus, we might expect more definite disturbance of cerebral function and, finally, when gross infection and considerable bacterial proliferation occur, a definite, more or less acute, meningeal reaction *plus* more intense toxic spoiling of the delicate brain cells.

The first stage of tuberculous meningitis is that of blood insemination; following this tubercles form, varying in number from the multiple to the solitary. Clinically this is probably unrecognizable in its earliest period and corresponds to the condition referred to above, where miliary tubercles are found *post mortem* without neurological symptoms having been observed during life. This stage merges insensibly into the second, which is that of subpial infection. As more local poisoning occurs through dissemination of tubercle bacilli and their products (and this will be accelerated by the escape of broken-down material into the cerebro-spinal fluid), clinical symptoms will become more evident. The latter part of stage one and stage two represent the prodromal stage of the clinical disease. It is now that the headache and the mental disturbances occur, and the curious changes of temperament seen in certain tuberculous patients in their latter days may thus be explained in some cases, certainly in those where these changes precede a terminal meningitis.

The third stage is that of massive meningeal infection, exudate formation and local softening. Here there is a sudden "mass action", the slow-growing bacilli have multiplied greatly, the typical

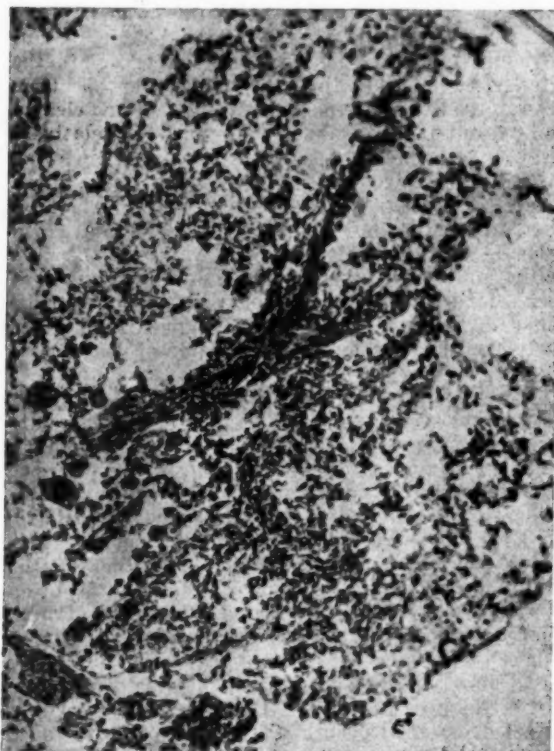


FIGURE III.

"allergic" reaction in the meninges has occurred, and serious damage is daily becoming more evident in the brain. This corresponds with the clinical stage of frank meningitis, the relatively sudden onset of coma and the fatal termination are readily explained.

The following case histories serve to illustrate these points.

CASE I.—A young man, aged twenty-five years, had an attack of pleurisy. After observation and investigation for six months at the Royal Prince Alfred Hospital tuberculosis dispensary no evidence of any definite active tuberculous disease could be discovered. Two weeks later he complained of headache, was listless and irritable, threatened suicide, and after two more weeks was admitted as an in-patient. The cerebro-spinal fluid contained 218 cells per cubic millimetre, all lymphocytes, 760 milligrammes of chlorides per hundred cubic centimetres, but no tubercle bacilli were found. A guinea-pig was inoculated, but no subsequent evidence of tuberculosis was found. He had visual disturbances, said that everything looked blue, was confused and irrational, and after fourteen days' illness, during which time repeated lumbar puncture was performed, fluid being removed under high pressure, he died quite suddenly and unexpectedly.

Post mortem there was a small and apparently healed scar of an arrested tuberculous lesion in the apex of the right lung. There was a slight amount of sticky exudate at the base of the brain, and in places fine adhesions were

found. Minute tubercles were seen along the vessels in the usual sites. These changes were very slight and there seemed no obvious reason for his sudden death. Microscopic section of the meninges showed a slight exudative reaction and some infiltration with endothelial cells and lymphocytes with a few small giant cells. This early proliferative change is seen in Figure III.

It is significant here to note the type of change found and to compare it with the clinical history.

CASE II.—A woman, aged fifty-six years, had been known for some time to be suffering from a chronic pulmonary tuberculosis. For about two months she had been noticed to be strange in her manner and conduct; she was very garrulous and full of anxieties. At the end of this period she complained of headache, had some vomiting, and two weeks later became unconscious quite quickly and died comatose after five days.

Post mortem there was found unilateral pulmonary tuberculous disease of the fibrous and cavitating type. Scattered tubercles were seen over the peritoneum, especially in the pelvis, and also in the spleen; some of these were small, but were well developed with giant cell systems. However, they were much more recent than other tuberculous lesions found in the brain, where, in addition to a recent exudative meningitis, there were two nodules of greater age. One of these was a small tuberculoma embedded in the tip of the left temporal lobe; it showed caseation and calcification. The other was a nodule, about half a centimetre in diameter, in the left internal capsule, with a caseous centre. A section of the former is shown in Figure IV.

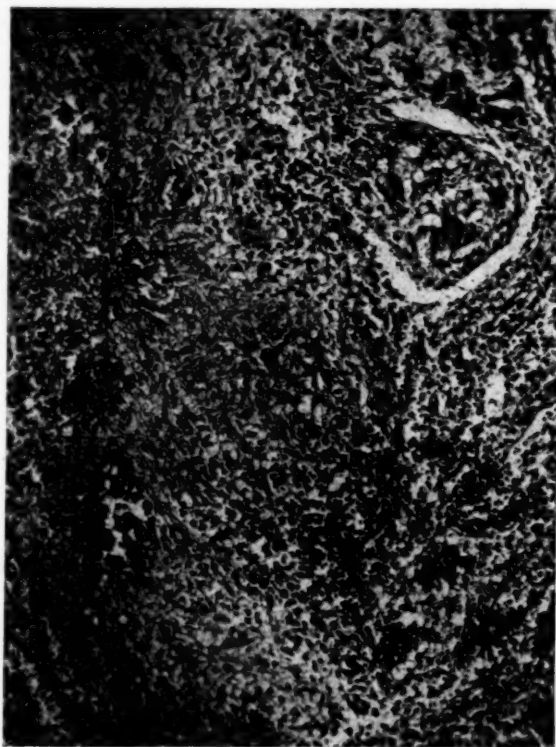


FIGURE IV.

There was a distinct difference in the age of these two sets of lesions, and it is most significant to connect the types of change found in the brain with

the long prodromal stage terminating in a rapidly developing meningitis.

CASE III.—A woman, aged forty-one years, a teacher, complained of headache for two weeks, steadily increasing in severity, and located chiefly at the occiput. She felt backache also, and had vomited occasionally. She was mentally confused, and on admission to hospital this was obvious; she taught an imaginary class beside her bed. No tubercle bacilli were found in the cerebro-spinal fluid, which was under high pressure, but there were 220 cells per cubic millimetre, of which 58% were lymphocytes and 42% neutrophile polymorphonuclear cells. The chlorides were 660 milligrammes per 100 cubic centimetres, and there was no definite increase in globulin. Rapidly she became more irrational; there was some ocular paresis, and she quickly lapsed into coma and died after three days.

Post mortem there was an old tuberculous lesion of one hip and the spine, with acute tuberculous necrosis of the suprarenal glands. Little change was found in the nervous system. There were some very fine tubercles in the pia-arachnoid at the base of the brain, slight stickiness, and an excess of cerebro-spinal fluid in the ventricles. There was no definite exudate, but tubercle bacilli were demonstrated in the meningeal tubercles. No special search was made for older lesions in the brain.

In this case note the nature of the mental symptoms and contrast them with the paucity of the autopsy findings. The suprarenal affection probably contributed to the rapid death of the patient.

CASE IV.—A man, aged thirty-six years, was admitted to hospital stuporose. He had irregular pupils, but no other definite abnormality in the nervous system. The Kernig sign could not be elicited. Some râles were detected in the apical portions of both lungs.

His history was that he had had considerable financial and domestic worry and had been depressed and moody on several occasions during recent years. Some years previously he was discovered to have a chronic pulmonary tuberculosis, but this had apparently remained in a relatively inactive form. For an ill-defined period prior to his admission, certainly some weeks, he had been much depressed, and during the last few days had sat at home disinterested and aimless. He was resentful of interference, refused food, and had vomited; this latter symptom was confusing, as it had been suggested to be due to alcohol. His condition at this stage strongly suggested an incipient psychosis. In hospital his stupor deepened; the cerebro-spinal fluid was under much increased pressure, slightly blood-stained, and contained many cells, chiefly lymphocytes; its chloride content was 600 milligrammes per 100 cubic centimetres. There were signs of increasing intracranial pressure, with swelling of the optic disks, and he died comatose.

Post mortem there was the usual fine speckling of the meninges with tiny tubercles and a thick gelatinous exudate in the chiasmal region and the Sylvian fissures. There were two well-developed tuberculomata in the choroid plexus, one being about one centimetre in diameter.

Here again the presence of a relatively old lesion in a patient who had long psychotic prodromata should be noted.

It is not contended that the symptoms are always of the type exemplified in these selected case histories nor that they can in every case be fitted into a set pathological picture. But it is contended that there is at least a definite group of cases presenting curious mental phenomena in which it is possible to correlate these characteristic and often relatively prolonged prodromata with the pathological changes described by Rich and McCordock. It is also probable that these prodromal signs will be more frequently recognized if they are borne in

mind and that an anatomical basis may be discovered in more of these if a sufficiently detailed examination of the brain be carried out. The whole question would be solely of academic interest if it were not bound up with the possibility of recognizing the disease before a frank and massive meningitis has begun the last destructive act of the tragic drama. And thus we come to prognosis.

Prognosis.

It is widely believed that tuberculous meningitis is uniformly fatal. This is not true, for, in spite of the almost invariably lethal nature of the disease, recovery does occur. It is quite likely that there are many cases of recovery from tuberculous affection of the nervous system where no meningeal symptoms are observed. Macgregor, Kirkpatrick and Craig⁽¹¹⁾ have recently described three cases of affection of the central nervous system in young children in which no meningitis occurred and in which the patients made a good recovery in spite of the fact that tubercle bacilli were demonstrated in the cerebro-spinal fluid by animal inoculation. I have observed an increase in the globulin in the spinal fluid in two cases in which the patient suffered from extensive chronic pulmonary tuberculosis, and in addition had in one instance severe pain and some muscle wasting in the hip and thigh, and in the other pain in the back and along the course of the corresponding nerve radicle. No tubercle bacilli could be demonstrated in the spinal fluid by bacteriological or biological test, but there is at least a strong suggestion that these cases are of similar type. But recoveries also take place from a genuine and bacteriologically proved meningitis. Kramer and Stein,⁽¹²⁾ in recording the recovery of a patient with proved tuberculous meningitis in 1931, analysed the literature and from some hundreds of case histories of patients who survived a clinical meningitis, collected seventy-three cases of recovery which seemed to them to be well authenticated. Their own patient was irrational and somewhat spastic, but no focal signs appeared, and he left hospital well. In this collected series very few children recovered. In some of the cases the ultimate result was good, for though the period of survival was short in most cases, in a number of others the patients were alive and well several years after. Though it cannot be regarded as scientific literature, Lord Frederick Hamilton's "Here, There and Everywhere" contains an account of a youth who, after a long course of treatment for phthisis, fell ill with tuberculous meningitis on board ship, but recovered. Perhaps this story is technically true; perhaps, too, his description of the lad's perverse and wilful character during his illness is true to life and to medicine.

If recovery takes place, it must occur before the final stage of the disease is entered upon. It is quite conceivable that an occasional patient may survive the first and second stages described above, provided that the leakage of tubercle bacilli into the subarachnoid spaces is not too massive or too rapid.

Treatment.

The need for early and frequent drainage by lumbar or cisternal puncture will be evident. If the nature of the early symptoms is recognized and free drainage by repeated punctures is practised, perhaps an occasional patient may be saved. It is of no use to wait for the demonstration of tubercle bacilli in the fluid. In only 25% of the case records examined in this series were bacilli found before death. The abundant cerebro-spinal fluid; the pleocytosis, which is predominantly lymphocytic in type, but also in part neutrophilic in the early acute cases; the altered chemical state of the fluid, with its decreased sugar and chlorides; the increase of protein, so well evidenced by the delicate fibrin clot: these findings, and even much less obvious changes when associated with suggestive symptoms, should be enough on which to base a working diagnosis and the necessary action. It is obvious that if bacilli are finding their way into the subarachnoid space, the sooner some attempt is made to remove them and their products by repeated drainage, the better, before they can multiply and produce even more serious effects. Some authorities have recommended irradiation, and the intraspinal use of gold salts has also been tried, but without any striking result. At least it is only just to any patient who is under suspicion of suffering from what is almost always a fatal disease, that we should try to adopt a line of action which has a logical basis and is not merely a passive exhibition of fatalism. Thus, by attempting to understand the pathology of this most dreaded of all the local manifestations of tuberculosis, by seeking to establish an early diagnosis, and by acting thereon, it may even be possible to add to that small but growing list of recoveries.

Summary.

1. A brief review is given of the pathological findings in tuberculous meningitis.
2. The mechanism by which the pathological processes occur is discussed.
3. The symptoms of the disease are briefly described, with particular reference to adults.
4. An attempt is made to explain the symptoms, in particular the prodromata, in the light of modern pathological knowledge.
5. A plea is made for more vigorous and early treatment.

Acknowledgements.

I am indebted to my colleagues at the Royal Prince Alfred Hospital for the use of the clinical records of certain patients, and in particular to the staffs of the pathological departments of this hospital and of the Sydney University for material and assistance.

References.

- ⁽¹⁾ "A Text Book of the Practice of Medicine", edited by F. W. Price, Fourth Edition, 1933, page 1526.
- ⁽²⁾ A. R. Rich and H. A. McCordock: "An Enquiry Concerning the Role of Allergy, Immunity and Other Factors of Importance in the Pathogenesis of Human Tuberculosis", *The Bulletin of the Johns Hopkins Hospital*, Volume XLIV, 1929, page 273.

⁽³⁾ Robert Muir: "A Text Book of Pathology", Third Edition, 1933, page 735.

⁽⁴⁾ V. P. Joukovsky and V. N. Roussikh: *Acta Paediatrica*, Volume XIV, Supplement II, 1933, quoted in *The Lancet*, Volume II, July 22, 1933, page 192.

⁽⁵⁾ A. S. Griffith: "The Incidence of Human and Bovine Bacilli in Tuberculous Meningitis", *The Lancet*, Volume I, June 30, 1934, page 1382.

⁽⁶⁾ W. J. Penfold and H. M. Butler: "Blood Culture in Tuberculosis", *THE MEDICAL JOURNAL OF AUSTRALIA*, December 23, 1933, page 837.

⁽⁷⁾ A. R. Rich and H. A. McCordock: "The Pathogenesis of Tuberculous Meningitis", *The Bulletin of the Johns Hopkins Hospital*, Volume LII, 1933, page 5.

⁽⁸⁾ W. B. Warrington: "Note on Tuberculous Meningitis", *The Lancet*, Volume II, December 17, 1910, page 1754.

⁽⁹⁾ A. Tillyard Holmes: "Tuberculous Meningitis in Adults", *The Lancet*, Volume II, September 6, 1933, page 635.

⁽¹⁰⁾ K. Ochsenius: "Ein früh Symptom der Meningitis tuberculosa", *Deutsche Medizinische Wochenschrift*, Volume LV, July 8, 1929, page 225.

⁽¹¹⁾ Agnes R. Macgregor, H. J. R. Kirkpatrick and W. S. Craig: "Three Cases of Tuberculosis of the Central Nervous System in Children", *The Lancet*, Volume II, July 7, 1934, page 13.

⁽¹²⁾ D. W. Kramer and B. B. Stein: "Report of a Case of Tuberculous Meningitis with Syphilitic Meningitis Terminating in Recovery, with a Review of the Literature", *Archives of Internal Medicine*, Volume XLVIII, October, 1931, page 576.

AN ATTEMPT TO PROPAGATE POLIOMYELITIS VIRUS IN THE DEVELOPING EGG.

By F. M. BURNET.

(From the Walter and Eliza Hall Institute, Melbourne Hospital.)

RESEARCH in poliomyelitis has always been hampered by the necessity for using such relatively large and expensive animals as monkeys. Serum therapy in particular can never rest on a scientific basis until methods are available for titrating the antiviral content of sera with a reasonable degree of accuracy, and this will undoubtedly demand the use of large numbers of animals. Unfortunately none of the more readily available laboratory animals are at all susceptible to infection by the virus. In the circumstances it appeared desirable to explore as thoroughly as possible whether the developing hen egg might not serve as an indicator of the presence of poliomyelitis virus.

This method of investigating virus diseases has only recently come into use, but has already provided results of considerable interest. In my opinion it is one of the most useful available methods for studying the virus diseases of birds, such as fowlpox (Woodruff and Goodpasture, 1931, Burnet, 1933), infectious laryngotracheitis (Burnet, 1934), fowl plague and Newcastle disease (Burnet and Ferry, 1934). Many viruses causing disease in mammals can be similarly propagated on the chorio-allantoic membrane of the developing egg. Those which have been studied are vaccinia (Stevenson and Butler, 1933), vesicular stomatitis (Burnet and Galloway, 1934), louping ill (Burnet and Galloway, unpublished), Rift valley fever (Saddington, 1934) and psittacosis (Burnet, unpublished). In addition to multiplication of the virus, all these show characteristic lesions of membrane or embryo after inoculation into the egg.

There are two features of poliomyelitis which strongly suggested that it would also be capable of growing and perhaps producing recognizable lesions in the egg. The first is the resemblance between infantile paralysis and louping ill in sheep, as stressed in a recent article by Gordon (1934). Louping ill virus grows readily and produces striking lesions in the chick embryo. In the second place, experience suggests that all those viruses which can be propagated in tissue cultures of chick embryo tissue can also grow on the intact chorio-allantoic membrane, while those which fail to grow in such tissue cultures also refuse to grow in the egg. The superficially similar viruses of foot and mouth disease and vesicular stomatitis of horses illustrate these differences clearly. The former fails to grow in chick tissue cultures (Maitland and Maitland, 1931) and does not survive even twenty-four hours on the chorio-allantoic membrane (Burnet and Galloway, 1934), while vesicular stomatitis multiplies under both conditions. Gildemeister (1933) has recently claimed that poliomyelitis virus can be cultured through at least twenty-one generations in tissue culture, using chick embryo, monkey serum and Tyrode solution mixtures in Carrel flasks and subculturing twice weekly. As it seems unlikely on general grounds that there is any necessity for a foreign serum in such virus culture experiments, one could reasonably expect that multiplication of the virus would occur in the developing egg itself.

This expectation has not been fulfilled. All my experiments have been completely negative and will therefore only be briefly described.

Material from five human cases (cords preserved in 50% glycerine) was suitably emulsified in broth, centrifuged, and the supernatant fluid inoculated on to the chorio-allantoic membrane of ten-day developing eggs, according to the technique previously described (Burnet and Galloway, 1934). Two or four eggs were used for each cord and opened after from three to six days' further incubation. No lesions suggestive of virus proliferation were observed.

More extensive observations were made with the use of a fresh virus of known pathogenicity for the monkey, the Rockefeller M.V. strain, in order to determine whether multiplication of virus occurred without the appearance of recognizable lesions.

First Series of Experiments.

A 10% suspension of spinal cord in broth was prepared from a monkey killed the same day at the height of paralysis after intracerebral inoculation of M.V. strain of poliomyelitis virus. The suspension was centrifuged and the supernatant fluid inoculated on to the chorio-allantoic membrane of three ten-day eggs, and intracerebrally into Monkey 5. The monkey showed typical signs of poliomyelitis on the fourth day and died on the fifth. The eggs showed only insignificant changes when opened on the fourth day after inoculation. Further eggs were inoculated: (A) with ground-up

membrane, (B) with an emulsion of embryo brain from the first generation eggs. Again no lesions were apparent on the fourth day. Emulsions were made from membrane (A series) and embryo brain (B series) and inoculated intracerebrally in Monkeys 6 and 7 respectively. Both animals remained normal and fifteen days after inoculation were tested for immunity by inoculation of cord suspension from Monkey 5. A control monkey showed symptoms on the sixth day, Monkey 6 on the fourth day, and Monkey 7 on the ninth day. All were completely prostrate on the day after the appearance of symptoms.

Second Series of Experiments.

It seemed possible that the failure of the first series was due to inability of the inoculated virus to come into contact with the nervous tissue of the embryo. A second series of experiments was therefore carried out, in which the material inoculated was a mixture of virus and living fragments of the brain from another chick embryo. It is well known that chick embryo fragments readily graft on to the chorio-allantoic membrane and may grow and differentiate in this situation (Murray, 1928). In other respects the experiment was identical with that of the first series. Membrane and embryo brain emulsions from the second "generation" were inoculated into three monkeys. None of these showed any symptoms nor any significant alteration in temperature during fifteen days after inoculation.

To test for any immunity in the inoculated monkeys the most sensitive available test was used, namely, to inoculate each monkey intracerebrally with a mixture of virus and its own serum taken the previous day. Virus and serum were left in contact overnight, equal volumes of supernatant fluid from a 5% emulsion of glycerinated cord and undiluted serum being used. All the monkeys, as well as a control, were paralysed on the fifth or sixth day, so that no humoral or general immunity had developed.

Finally, it may be added that several duck eggs have been inoculated according to the same technique without showing any visible lesions. No tests for survival of the virus were made, however.

Conclusion.

No evidence has been obtained of propagation or survival of poliomyelitis virus on the chorio-allantoic membrane of the developing egg.

Bibliography.

- F. M. Burnet: "A Virus Disease of the Canary of the Fowl-pox Group", *The Journal of Pathology and Bacteriology*, Volume XXXVII, 1933, page 107.
 F. M. Burnet: "The Propagation of the Virus of Infectious Laryngotracheitis on the Chorioallantoic Membrane of the Developing Egg", *The British Journal of Experimental Pathology*, Volume XV, 1934, page 52.
 F. M. Burnet and J. D. Ferry: "The Differentiation of the Viruses of Fowl Plague and Newcastle Disease: Experiments Using the Technique of Chorioallantoic Membrane Inoculation of the Developing Egg", *The British Journal of Experimental Pathology*, Volume XV, 1934, page 56.

F. M. Burnet and I. A. Galloway: "The Propagation of the Virus of Vesicular Stomatitis in the Chorioallantoic Membrane of the Developing Hen's Egg", *The British Journal of Experimental Pathology*, Volume XV, 1934, page 105.

E. Gildemeister: "Über die Zuchtung des Poliomyelitis virus in kunstlicher medium", *Deutsche Medizinische Wochenschrift*, Volume LXIX, 1933, page 877.

W. S. Gordon: "Poliomyelitis and Louping Ill", *The British Medical Journal*, May 19, 1934, page 885.

P. H. Harmon, H. J. Shaughnessy and F. B. Gordon: "The Effects Upon Animals of Inoculation with the Virus of Poliomyelitis, in Rabbits, in Dogs, Cats, Guinea-Pigs, Mice and Other Animals", *Journal of Preventive Medicine*, Volume IV, 1930, pages 59 and 89.

H. B. Maitland and M. C. Maitland: "Fourth Progress Report of the Foot and Mouth Disease Research Committee", London, His Majesty's Stationery Office, 1931.

D. P. F. Murray: "Chorioallantoic Grafts of Fragments of the Two-Day Chick", *The Australian Journal of Experimental Biology and Medical Science*, Volume V, 1928, page 236.

R. S. Saddington: "The in vitro and in vivo Cultivation of the Virus of Rift Valley Fever", *Proceedings of the Society for Experimental Biology and Medicine*, Volume XXXI, 1934, page 693.

W. D. H. Stevenson and G. S. Butler: "Dermal Strain of Vaccinia Virus Grown on the Chorioallantoic Membrane of Chick Embryos", *The Lancet*, July 29, 1933, page 228.

A. M. Woodruff and E. W. Goodpasture: "Susceptibility of Chorioallantoic Membrane of Chick Embryos to Infection with Fowlpox Virus", *American Journal of Pathology*, Volume VII, 1931, page 209.

OSTEOMYELITIS.¹

By DAVID IMRIE FITZPATRICK, M.B., B.S.,
F.R.C.S. (England),
Sale, Victoria.

ACCORDING to Wakeley, osteomyelitis is a disappearing disease because of the improvement in the general health of childhood. It is of special interest in that our methods of treatment exemplify the alteration of our ideas from "I dressed and healed his wounds" to that of Ambroise Paré, who said: "I dressed the wound and God healed him."

The three main factors in aetiology in acute hæmatogenous osteomyelitis are septic foci, lowered general health and trauma. There is always a septic focus, most commonly a skin lesion, though the skin may be healed when the infection in the bone commences, just as glands in the axilla or groin may enlarge and suppurate after the infected abrasion on the foot or finger has healed. The association of a skin lesion, *Staphylococcus aureus* and bone lesion is usual and contrasts with an upper respiratory tract lesion, streptococcus and joint lesion. Ninety per centum of acute bone lesions are *Staphylococcus aureus* infections. We usually overlook the septic focus in the urgency of the bone condition. After that is controlled, the elimination of septic teeth, tonsils and sinuses would assist in improving the general resistance, which needs supporting for its work of clearing up the bone disease. Osteomyelitis, like furunculosis, not infrequently attacks an apparently healthy child.

Trauma has been discounted by Wakeley as a cause, but I find that difficult to accept; the association is so frequent, the idea of the infected hæmatoma is so acceptable, and the distribution of

the lesions seems to indicate trauma as a deciding factor. As regards diagnosis, the four diseases to be differentiated seem impossible of error, but I have seen them all since my student days. Rheumatic fever, typhoid fever, and poliomyelitis were mistaken diagnoses in cases of osteomyelitis of the femur, and *erythema nodosum* for a traumatic periostitis. But probably the most common error is in finger infections. Kanavel's work has made us think of tendon and fascial space infections so much and we forget that many of them are primarily osteomyelites of the phalanges. Then errors are made in the diagnosis of the site of the lesion; the lower end of the femur may be opened when the pubic bone or neck of the femur may be infected. The facts that both the femoral and obturator nerves supply branches to hip and knee joints and that pain is referred to the knee joint or the skin over it in some hip conditions have been overlooked. Most acute infections of the hip joint are really osteomyelitis of the neck of the femur, and in these early diagnosis offers a slight chance of avoiding joint infection. One aid to diagnosis, a blood count, is omitted all too frequently, whilst an X ray examination is made on the off chance that it may give some help. It may show some widening of the joint space in an acutely inflamed hip joint, but the bony changes are nil for about ten days. Between the tenth and fourteenth days irregular rarefaction of cancellous bone about half to one inch from the epiphyseal line is shown. X ray examination after three weeks reveals an irregular outline, periosteal thickening and wide rarefaction. Then appear irregular areas of cortical necrosis and cavities with irregular non-sclerosed outlines and possibly enclosed sequestra.

It is in treatment that our ideas have clarified most. Even as late as 1931 a modern text-book advocates what I may call the classical treatment of acute osteomyelitis. The bone is opened widely, curetted, swabbed with strong antiseptics, eusol, salt packs, flavine and paraffin, or irrigated according to the Carrel-Dakin system.

Starr's method of boring the bone is comparable with the drainage by incision of an abscess in soft tissue. The drainage of pus under pressure, to which the constitutional symptoms are due, allows the protective and reparative bodily mechanisms to overcome the infection. Very occasionally this occurs in bony infections also, but more often the infection is not completely overcome, and under an apparently healed scar bone destruction continues, to be revealed by X ray examination undertaken on account of continued pain or a spontaneous fracture. Localized fibrocystic disease may be an osteomyelitis almost but not quite controlled by the body. This method is of value in early infections of the neck of the femur, when boring through the greater trochanter may obviate an infection of the hip joint.

Winnett Orr's method was introduced originally for compound fractures and chronic osteomyelitis, but it is equally applicable to acute hæmatogenous

¹Read at a meeting of the Victorian Branch of the British Medical Association on August 18, 1934.

osteomyelitis. It consists of thorough *débridement* or drainage, filling the wound with vaseline and gauze, covering it and fixing it in the best position with plaster of Paris, and leaving it alone for as long as possible.

Expectant treatment has recently been advocated by some. The affected limb is placed at once in plaster of Paris and a window is cut over the inflamed area. An incision is made through the periosteum when the pus has become subperiosteal.

The objections to the first method are the need of frequent and expensive dressings and complicated treatment, chemical irritation of the tissues, the risk of secondary infection during these dressings, opening up of fresh areas of bone to infection and destruction of the inflammatory barrier, and exhaustion of the patient by pain, anaesthetics and secondary infection.

Objections to Starr's method are that drainage is incomplete and dead framework is not removed. The inflammatory reaction in bone and soft parts is the same, but the soft parts of the bone (vessels and tissue in the Haversian canals) are destroyed and removed long before the calcium salts of the bony framework, which remains to keep up irritation and which obstructs the rebuilding process. So that although by opening the area widely leucocytic barriers may be broken down, yet obstructions to a cure at one sitting are removed.

The chief objection to Winnett Orr's method is the smell, but that is seldom so terrible. I have had failures through soft tissue abscesses developing. This may be avoided by close attention to the temperature chart and the patient's general condition. On the other hand, this method gives thorough drainage, is comfortable for the patient, and rests the inflamed part, is simple, and may attain cure with one operation.

Of the expectant treatment I am not competent to speak. The idea underlying it is that the inflamed bone is to be regarded as a vascular tissue. This is so in childhood, near the growing end of bone, where there are large sinusoids and soft bony tissue. No one would operate on thrombosed cavernous tissue.

A recent suggestion for treatment is the administration of "Stannoxyl" tablets, as for other staphylococcal infections. This is given in doses of 0.18 gramme (three grains) in tablets, six to twelve tablets a day being given.

Albee uses a modification of Winnett Orr's treatment. His idea is that there is some antibacterial agent in the wound, so a mixture of paraffin, three parts, vaseline, one part, is poured into the wound round a catheter, through which injections of ten cubic centimetres of bacteriophage solution are made bi-weekly.

This outline of the subject is necessarily brief and much has been omitted, but my aim is to promote discussion of this important subject.

THE RELATIONSHIP OF ALLERGY TO THE AUTONOMIC NERVOUS SYSTEM.

By SYDNEY PERN, M.R.C.S., L.R.C.P. (England),
Melbourne.

OUR conception of disease and its treatment is changing with extraordinary rapidity at the present time. The solutions of many problems are gradually being evolved. Of the various factors that go to make up disease, inflammatory and allergic reactions constitute a large proportion. A great deal has been written about inflammatory reaction and its pathology, but I am not so familiar with the pathology of allergic reactions as shown in urticaria and eczema, except to know that there is a tendency for fluids to exude from the capillaries. To treat disease satisfactorily we must endeavour to ascertain certain fundamentals. It is first necessary to know if the exudation is due to bacterial invasion or not. We must also find out whether the toxins, by which the bacteria bring about harm, are produced at one locality and carried by the blood stream to the different parts of the body, or whether the bacteria themselves are blood-borne and are carried to certain tissues and there held up to produce damage in that spot. We also have to know whether they are destroyed there or whether they continue to multiply in that locality. We have to find out whether they are living in foci outside the influences of the defence forces of the body, capable of gaining entrance and living long enough to produce local damage, yet not long enough to be able to multiply. We must also have some idea in our minds of what the defence forces of the body consist and what are the types of reaction they put up, so that we can assist them, if possible. We must likewise try to ascertain the mechanisms of the interesting conditions known as allergy and anaphylaxis, because between inflammatory reaction and allergy lies most of the story of the annihilation of disease. It is not by treating a kidney, a heart or a pancreas that we are going to achieve success, but by aiming at the root cause of disease. It is not by applying diathermy to an inflamed joint, breaking down adhesions, or using wool pressure that we are going to effect a permanent cure. No doubt these forms of treatment do assist, but we must get to the basic cause, for then the same treatment will apply to pathological conditions in different tissues. Disease treated by eliminating the cause brings about a complete cessation; any other process is only temporary.

We are aware that all involuntary reaction is controlled by the autonomic nervous system; and owing to unfortunate terminology having been applied to its two divisions by various writers, confusion has arisen in the minds of many. The two divisions are better distinguished functionally than anatomically, as at times the one nerve carries both fibres, and, even if a nerve is supposed to be purely of the one order and the response is of the other, it is by its response it must be judged.

I make no claim to a physiological knowledge and am ready to stand corrected, but to try to make my point clear I am putting forward these views, which I believe to be fairly correct in the main. The terms that appear to be most expressive are sympathetic and parasympathetic. Every involuntary movement or glandular secretion must have an excitatory and inhibitory mechanism. Every vessel must be under control to contract or expand according to the messages it receives. It may be possible that an excitatory mechanism is enough in some conditions, but of the truth of this I do not know. In whatever circumstance the sympathetic is excitatory the other is inhibitory, and *vice versa*. As every mechanism in the body, except voluntary mechanisms, is under the control of these two systems, we find each controlling a group of glands either secreting into the alimentary tract or into the blood stream. Without going into the matter too deeply, we have in the sympathetic group the control of all that pertains to defence of the being and its ability to overcome its enemies, be they man, beast or bacteria, as well as the procuring of food and sex matters. On the other hand, we have the parasympathetic controlling digestion, assimilation of all foods and excretion of waste products. In an article published in February, 1926, in *The Medical Journal and Record*, on "Some Views on the Problem of Anaphylaxis",⁽¹⁾ I pointed out (I believe for the first time) that all allergic and anaphylactic phenomena fell under the parasympathetic control. On the sympathetic side we have the thyroid, adrenal and pituitary assisting in the defence mechanism. We thus arrive at the conclusion that the combating of infections is controlled by the sympathetic and that the elimination of bacterial toxins and waste products belongs to the domain of the parasympathetic. We have long known that adrenal and sympathetic action are synonymous, and it has not long been known that when a sympathetic nerve excites a muscle or gland there is an actual secretion of adrenaline at the myonural junction or end plate. This secretion is neutralized by ergotoxin. Dale⁽²⁾ has recently made a most interesting discovery in that he finds that when a parasympathetic nerve incites a gland or muscle to action there is a secretion of a substance which has every characteristic of acetylcholine and which is neutralized by atropine. He thinks that its action is extremely rapid and it is at once destroyed by an esterase in the tissues. Another interesting discovery shows that eserine destroys the esterase and so allows of the identification of the acetylcholine-like substance. This, applied to any muscle or gland controlled by the parasympathetic, produces an appropriate response. The action of eserine allows of the prolongation of the parasympathetic or vagal stimulus. Dale has applied the terms "cholinergic and adrenergic" instead of parasympathetic and sympathetic impulses, as they are descriptive of their action.

As a great many of the symptoms of disease are the result of the over-action or unbalanced action of

one or the other of these systems, it is essential that we are clear in our minds on these points, as the understanding of them will materially help us in diagnosis and treatment. It has long been known that asthmatics, or families in which there are asthmatics, are liable to other allergic phenomena, such as urticaria, *erythema nodosum* and angioneurotic oedema; also that these people are allergic to a variety of pollens and other substances which are not necessarily of the order of a foreign protein but which may be of mineral or other nature. We do know that these allergic phenomena are quickly amenable to adrenaline and therefore place them under the parasympathetic or cholinergic system, but there are others which resemble them in many ways, such as the eczemas, which do not respond in the same way.

We as physicians know that there are a lot of people who react badly to or who are what we call anaphylactic to certain substances, such as turpentine, arspenamine, pollens, certain dyes *et cetera*, conditions which we have attributed to sensitization. These conditions are very closely allied to those in which we see the cholinergic impulses predominating, and we thus feel disposed to place them under the same category of predominating parasympathetic impulses. We also know that many of these conditions clear up with the elimination of foci of infections, and knowing that the cholinergic or parasympathetic system is concerned with elimination of harmful and waste products, we are inclined to the conclusion that it is an effort on the part of this system to eliminate them.

Such being the case, we still have to ask ourselves why some people get these symptoms and others do not, so we infer that something is wrong with the balance of the autonomic nervous system. It therefore behoves us to try to find the causation of this imbalance. We turn to the other side of the question of over-action of the sympathetic system, with its tachycardia and increased excitability, with adrenergic or sympathetic impulses dominant. Here we find infections producing a syndrome of symptoms which has been specified by me as "the toxic syndrome",⁽³⁾ with tachycardia and nervous excitability as the characteristic symptoms. It is a curious anomaly that the same cause may produce such diverse conditions in different individuals.

For instance, an infection can produce "the toxic syndrome" on the one hand and an urticarial or anaphylactic phenomena on the other. The one we conclude to be the work of the attacking forces, the other the attempt on the part of the body to eliminate the antigen or toxins. Such a mechanism, if properly balanced, will fulfil all necessary functions. At times we find that this balance is far from even; one or the other is aggressively predominant. We have long known that adrenaline was the keynote to the sympathetic system, controlled by ergotoxin or eserine, but it is only now that we know in what way eserine acts, and that is by prolonging the action of the parasympathetic, destroying the esterase, which normally neutralizes

the acetylcholine secreted by parasympathetic impulse.

Both adrenaline and atropine promptly check parasympathetic hyperactivity as seen in anaphylactic phenomena, the one by stimulating the sympathetic, the other by inhibiting the parasympathetic; but of the two adrenaline is the more pronounced; and to curb excessive sympathetic activity we use eserine, which increases the parasympathetic balance, as already explained. It would now seem that the esterase dominates the situation. With excess we get sympathetic phenomena dominating, with little the parasympathetic holds the field, the former depicted in the symptoms of exophthalmic goitre, the other by anaphylactic phenomena. It is interesting to realize what a little step separates two such striking conditions. We here stand on the verge of great discovery, as the solution of the problem of the production of esterase is going to put in our hands enormous powers over the control of disease.

One cannot help thinking that the thyroid plays a considerable part in the control or production of esterase, because in thyreotoxic conditions the esterase swamps the acetylcholine substance immediately and so prevents the balancing action of the parasympathetics. With anaphylactic shock and allergic phenomena there is no esterase to cut short the acetylcholine, so parasympathetic phenomena control the field.

Reaction, then, in the body is either sympathetic destructive or parasympathetic eliminative. The sympathetic pathology as illustrated by inflammation is fairly well known. The other side of the question is likewise of vital interest, as so many pathological lesions come under this heading. The question of sensitization is here involved. Langdon Brown has expressed the idea that an urticarial wheal is the result of a violent attempt on the part of the body to eliminate some toxic element; and I believe we can still hold to this, as it is the basic function of the parasympathetic system. Between the destruction of the organism and the elimination of its toxins lie most of the pathological lesions, except those which are the result of irritation or damage to the cell itself.

The tissues have shown themselves sensitive to many things, not necessarily foreign proteins; dyes, drugs, minerals, even heat and cold, are capable of producing these reactions. Of all the substances that bring about sensitization, the bacterial toxin stands high. We can understand, where inflammation is concerned, that the presence of the organism is necessary for the reaction, but with a toxin that is not so. The toxin can be separated from the organism, yet at the same time, in the majority of cases, the toxin acts in close proximity to the organism. Now, whereas the destruction of the organism is an affair of the sympathetic system, the elimination of the toxin is the business of the parasympathetic.

It has been suggested that in those cases in which there is a general reaction the antibodies are free

in the blood, and that in those in which the reaction is local, they are fixed to those tissues in which the reaction occurs. When organisms enter the blood stream and locate themselves in a certain tissue to the exclusion of others, they are said to have a specific elective affinity for them; in other words, these tissues have been sensitized to the toxin of the organism and thereby cause the arrest of that organism in the capillaries of that tissue. We not only have the inflammatory reaction brought about, but a local allergic one as well. It is not improbable that a good deal of tissue swelling and fluid in joints is due to this factor in arthritis. Where blood-borne organisms are concerned, what obtains in one tissue must likewise obtain in others, but in such conditions as syphilis and tuberculosis, in which the organisms are mostly confined to the lymphatics, the pathological picture has other features. Except for this we have no reason to expect a different reaction in different tissues, although it may be greatly modified according to virulence of the organism and resistance of the patient.

We have constantly to bear in mind that one of the chief reactions of the parasympathetic group is vasodilatation with a tendency to exudation, as seen in the dilatation of blood vessels and the exudation associated with urticaria, also the turgescence and engorgement seen in the nasal and bronchial mucosa in hay fever and asthma. In the June 16, 1934, edition of *The British Medical Journal*, Holt and Macdonald⁽⁴⁾ have contributed an article, "Observations on Experimental Shock". They come to the conclusion that "primary shock is most easily explained on the basis of a disturbance of the nervous system. This variety of shock results from a reflex inhibition of the heart and a reflex relaxation of vascular tone through the body"—in other words, parasympathetic or vagal shock. The other, or delayed, shock is, according to their experiments, the result of extravasation of blood and serum into the damaged tissues and is in proportion to the amount of such extravasation. The actual causation of this extravasation is at present unknown. The recent work of Dale may possibly throw some light upon this and solve the problem, and I venture to suggest the following possibilities. Dale has explained how the action of acetylcholine is immediately cut short after it has performed its duty, by esterase in the tissues, and that eserine delays the action of the esterase and so prolongs the vasodilatory action of the acetylcholine. Does it not seem that here we have the key to excessive exudation of serum? It is certainly not osmotic. Acetylcholine was not detected until eserine was employed, and that is an excellent reason why no vasodilatory substance has been found in the venous blood returning from a damaged area. This reaction of extravasation can only fall within the fields of the sympathetic or parasympathetic system, as there is no other, and everything points to the parasympathetic group. It would seem that the normal power of the esterase to inhibit rapidly the

action of acetylcholine had been grossly interfered with, owing to the injury to the tissues. I should be extremely surprised if experiments done on the lines of those of Dale with the use of eserine do not recover acetylcholine as the vasodilatory substance.

There is, then, every reason to believe that the factor which causes exudation in the urticarial wheal is the same factor as that causing the transudation of serum in a damaged limb. In each there is injury, small or large, and the body is employing its primitive methods of dealing with it. Exactly what are the basic principles involved it is not at present possible to say, but one can feel sure that the transudation of serum is one of the very primitive methods employed both for the destruction of organisms as well as to wash them away and prevent their entrance to the tissues. In injury there is some factor which inhibits the action of esterase and so allows of the prolonged action of the acetylcholine. There can be little doubt in our minds that the transudation of urticaria is under parasympathetic impulse, as it is so quickly checked by adrenaline. We know that adrenaline is of considerable benefit in shock, but I do not know whether its use has been pushed to the extent it has in anaphylactic shock. Esterase and adrenaline apparently have the same function in inhibiting parasympathetic impulse. We see sympathetic impulse run riot in exophthalmic goitre, so one cannot help connecting the thyroid with control of the adrenal supplies, as esterase and excessive thyroid output function alike. In asthma and allied allergic phenomena both thyroid extract and strychnine are of benefit, as both seem to stimulate the adrenals to increased action. Adrenaline, owing to its rapid and evanescent action, is unsuitable for constant use, but with the advent of ephedrine we have a similar but more prolonged action, and its use in shock may be of great value if employed after a preliminary dose of adrenaline. It would seem that as long as the fight is on the sympathetic has control of affairs, but once that is finished the parasympathetic holds the field, and I believe that by keeping this basic fact firmly in one's mind it will help considerably in solving these problems.

As in many cases destruction and elimination must go on at the same time, we cannot be surprised to see inflammation and allergy occurring in the same locality. There are, then, two points to consider: inflammation *per se* and inflammation *plus* allergy. With the former I shall not deal, as its pathology is well known, but of the latter there are several considerations meriting our attention. What we understand as *erythema nodosum* has for some time been a source of much controversy, and it is difficult to reconcile certain known facts. We do know that at times various organisms have been isolated from the nodes. What they are really does not matter; as the phenomenon is simply a response to some toxin to which certain tissues have become sensitized, one would not expect it to be specific. It has also been recorded on very good authority

that several children have developed the condition simultaneously, suggesting that they had ingested some toxic substance to which they were more or less anaphylactic. It would seem at first thought that two such causations could not possibly produce a similar reaction, yet on consideration one realizes that as it is a toxin and not an organism that is responsible for the reaction, and that the toxin is capable of being separated from the organism, it is then possible to find organisms in the node on one occasion and not on another.

Now, coming to the eczemas and allied conditions, we are struck by the combination of allergic *plus* inflammatory reactions, sometimes one, sometimes the other predominating, as seen in dry or wet eczema. We do know that the removal of a focal infection often has the power of eliminating them completely.

My knowledge of the pathology of eczema is very limited, but microphotographs used by Handley in his "Genesis of Cancer"⁽⁵⁾ show that there is a definite lymphangitis, that is, there is some reaction taking place in the terminal lymphatics causing proliferation of the lining endothelium and bringing about blockage of the lymphatic. We know very well that in the majority of cases bacteria are chiefly responsible for this result, yet, curiously enough, a chilblain can produce an exactly similar pathological condition. As previously mentioned, a variety of substances may cause sensitization in tissues; amongst these were heat and cold, as well as bacterial toxins. So, as in *erythema nodosum*, it did not matter whether the organism was there or not; as long as the toxin was present we must apply the same principle to the eczemas *et cetera*. In a direct invasion of the skin by streptococci we get erysipelas with no allergic phenomena because there is no sensitization, but in an eczema we have either the organisms or their toxins lodging in the sensitized terminal lymphatics, probably reaching there by way of the blood stream, causing blockage of the lymphatics due to proliferated endothelium *plus* a parasympathetic exudation of serum. The difference, then, between an urticaria and an eczema is that in the former we have a purely allergic reaction controlled by adrenaline, and in the latter a combined allergic *plus* inflammatory reaction controlled only by eliminating the toxin or organism. These views are put forward as suggestions for consideration.

References.

- ⁽¹⁾ S. Fern: "Some Views on the Problem of Anaphylaxis", *The Medical Journal and Record*, February 3, 1926.
- ⁽²⁾ H. Dale: "Chemical Transmission of the Effects of Nerve Impulses", *The British Medical Journal*, May 12, 1934, page 835.
- ⁽³⁾ S. Fern: "The Toxic Syndrome", *THE MEDICAL JOURNAL OF AUSTRALIA*, March 8, 1919, page 189.
- ⁽⁴⁾ R. L. Holt and A. D. Macdonald: "Observations of Experimental Shock", *The British Medical Journal*, June 16, 1934, page 1070.
- ⁽⁵⁾ Sampson Handley: "Genesis of Cancer".

The Medical Journal of Australia

SATURDAY, JANUARY 12, 1935.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

DISTRICT NURSING IN SYDNEY.

WHAT is known as district nursing is well established in at least three large centres in Australia—Melbourne, Adelaide and Sydney. In Great Britain the same kind of nursing organization exists. It is a service most useful to the patient and satisfactory both to hospitals and medical practitioners. Many patients on their discharge from hospital still need some nursing attention, such as a surgical dressing. When this treatment is undertaken at the patient's home (and this type of treatment is one that a district nurse can undertake), patient, hospital and medical attendant have reason to be content. The hospital is relieved of the attendance of another patient at what is probably an already overcrowded out-patient department. The patient is saved the trouble and possibly the pain of making a tedious journey to obtain treatment. The medical practitioner, if the organization is carried out in the proper way, finds that his patient

comes once again under his supervision. If the patient making journeys to a hospital happens to be a child, one of the parents or some other member of the family is not taken from work or household duties and others in the home are not neglected. It is also conceivable that continued journeys to and from a hospital may be prejudicial to a patient's recovery. Another type of patient to whom the visit of a district nurse is a godsend, is one who is wholly or partially bedridden as a result of some chronic disease or possibly of some old-standing and disabling injury. The unfortunate patient is generally in poor circumstances and dependent on relatives or neighbours whose knowledge is rudimentary. If these patients cannot be treated in their own homes, they are compelled to seek admission to a government institution. The effect of a nurse's visit to such a patient's home is, of course, not limited to the actual treatment that she gives.

The district nursing services in Melbourne and Adelaide are, we understand, more active and in a much more flourishing condition than is the service in Sydney. The Council of the District Nursing Association in Sydney is gravely concerned at the small amount of work that its nurses are called upon to do and at the inadequate support that it receives. Since it was founded in 1900, the District Nursing Association in Sydney has been supported by private donations and subscriptions. Some years ago the Government of the day assisted the association in the purchase of a house that is used as a home for the nurses. Only once since then, and that in 1934, has the association received financial assistance from the Government—in 1934 it was granted the sum of £550 out of a total of £700 voted for district nursing. The District Nursing Association in Sydney employs only nine district nurses, a number quite inadequate for a city that boasts upwards of a million inhabitants. During the year ended July 31, 1934, 19,173 visits were paid by the nurses; 136 patients were on the register at the beginning of the year; and 640 new patients were treated during the year.

We have described the type of work undertaken by the District Nursing Association. We have

shown that the members of the medical profession have every reason for taking an interest in the activities of the association. We have pointed out that the association should be able to extend its activities over a much wider sphere. The council of the association is anxious to go much further afield. It is thought that many medical practitioners, particularly in the poorer parts of the metropolitan and suburban areas, do not know that they can, by calling on the District Nursing Association, help their patients in many ways and make their own treatment more beneficial. They are invited to make application for assistance to the Matron of the District Nursing Home at 36, Boyce Street, Glebe, New South Wales. Hospital authorities should remember that this service exists. On discharge from hospital a patient should be sent by hospital authorities to his or her former medical attendant. If this were done, the medical practitioner would be able to call on the District Nursing Association if he thought that the help of a district nurse was necessary. If the matron of the District Nursing Home were notified, she would communicate with the patient's usual medical attendant. In Great Britain, when the question of domiciliary attendance was discussed by the Hospitals Committee of the British Medical Association, it was held that in no circumstances should patients unsuitable for or not needing or having completed hospital treatment be referred to any agency other than the general practitioner. It was stated that in respect to patients whom the hospital regarded as still under its care, but in need only of nursing attention at home, the general practitioner should invariably be informed of the hospital's action and the patient should be instructed to report to the practitioner. General practitioners in and around Sydney may rest assured that every endeavour will be made by the District Nursing Association to conform to the recommendations of the Hospitals Committee of the British Medical Association. A final point that should be emphasized is that if more work is found for the district nurses to do, the public will surely find the necessary financial support.

Current Comment.

RECURRENCES IN PNEUMONIA.

It is well recognized that persons who have suffered from attacks of pneumonia due to one or other form of the pneumococcus are liable to fall victim to a similar infection in a certain proportion of cases. The percentage of such recurrences as judged by the history given by the patient varies according to different writers from 13% to over 30%. Individual patients have been known to suffer many attacks, and if the probable frequency of pneumonia in children is borne in mind (for in them the disease is often benign and certainly not always recognized or even treated), cases of recurrent attacks of the disease must be not uncommon. It is of great interest to inquire what is the explanation of this. Is it that there is a special tendency to this type of reinfection in certain persons, due to naturally low resistance, to local lack of resistance in the lung, or to an actual tendency of one attack to pave the way for another, or is it that an infection by a pneumococcus of one group fails to protect against a member of another group?

This problem is considered by M. Finland and A. W. Winkler in an analysis of fifty-seven cases of repeated attacks of pneumonia in which accurate information was available with regard to the infecting types.¹ They only included cases in which the proof of a genuine pneumonic attack was satisfactory and in which the pneumococci at fault had been serologically identified during two or more attacks. They found that the type of the pulmonary lesion was lobar in approximately three-quarters of the cases; in most of the remainder a primary lobar attack was followed by an atypical attack, in which distribution was more patchy and of the order of a bronchopneumonia. It is interesting to read down the list of the fatal cases. In each instance there was some untoward feature of the illness, such as the coexistence of diabetes, nephritis, congestive heart failure, alcoholism *et cetera*, and only in very few did a pure toxæmia kill the patient. A further point of interest concerning the recurrent pneumonias in general was that in more than a quarter of the cases the second attack was apparently induced by some extraneous factor, such as operation, accident or intercurrent illness. The importance of recent pneumonic attacks in patients whom it is proposed to subject to any surgical ordeal will be apparent. As regards the actual types of pneumococcus causing the illness, it was found that there was no special correlation between the types found in the different attacks. For example, the twenty patients who suffered a primary pneumonia due to Type I showed an average distribution between the various types in their second attack; and the nineteen patients who had a Type I pneumonia in the second attack showed a similar distribution in their first attacks. Thus the pneumococcus responsible for an attack

¹ *The American Journal of the Medical Sciences*, September, 1934.

did not necessarily protect the patient against an attack from the same or a different type. One very interesting finding was that out of thirteen cases in which the homologous type antiserum had been used in treatment no less than four suffered a recurrence later due to the same variety of pneumococcus. Does this mean that serum therapy may actually confer a less lasting degree of immunity on the patient? It should be pointed out, however, that the recurrences in these cases took place soon after the original attack; apart from these, serum treatment had little effect upon the character of the recurrence.

This series is not large, but it needed no little perseverance to find even these cases, for 5,000 case histories were consulted before the fifty-seven here analysed could be found. But, as far as it goes, it would appear that there is no special change produced in the lung or in the body in general by an attack of pneumonia that would alter the degree of susceptibility of the individual to the various pneumococcal types.

CYSTICERCOSIS.

ALL medical practitioners are familiar with the hydatid cyst, the larval stage of *Echinococcus granulosus*; but many are apt to forget that the larval forms of other tapeworms may occur in man. The essential factor in infestation with cysticerci is the entry of tapeworm ova into the stomach. Man may become infested by contaminated food or water; if he harbours an adult tapeworm, he may convey ova to his mouth by his hands, or mature proglottides may migrate along his intestine to his stomach, or ova or proglottides may be conveyed to the stomach by retroperistalsis accompanying excessive vomiting. The hexacanth embryo is liberated from the ovum by the action of the digestive juices; it reaches the blood stream and is carried to some remote part of the body, where it becomes encysted. The brain, muscles and subcutaneous tissues are the parts most frequently invaded. Many hundreds of cysts may develop in one person. Infestation with cysticerci of *Tenia solium* is not uncommon. *Tenia saginata*, though a commoner human parasite in temperate climates, seems rarely to occur in its larval stage in man. Possibly it occurs quite as frequently as *Tenia solium*, but causes symptoms less frequently.

W. P. MacArthur has recently drawn attention to the importance of cysticercosis as a cause of epilepsy. Inspired by MacArthur's admirable work, H. B. F. Dixon and D. W. Smithers conducted an investigation into epilepsy in cysticercosis (*Tenia solium*) among soldiers and their dependants at the Queen Alexandra Military Hospital, Millbank.¹ They also endeavoured to trace the later history of all cases reported in Great Britain. They obtained the record of 71 cases, 33 of which had been reported either before or during their investigation, one as

early as 1892. As evidence of the reawakened interest in the disease, they point out that though their series includes all cases that they have been able to trace, 36 of the 71 were diagnosed in the two years prior to the completion of their paper, and all but 14 since 1926. They remark that in the early stages of cysticercosis there may be no symptoms; but many patients suffer from fever, general malaise, myalgia *et cetera*. In some cases the first symptom is severe headache. They go on to say that "the majority of patients develop some form of epileptic attack". There does not seem to be justification for this statement; possibly many persons become infested with cysticerci without developing any symptoms of note.

The parasites apparently cause little disturbance until they die. The fluid content of the cyst then increases and the cyst becomes tense and swollen. It is suggested that the symptoms are caused partly by toxic effects and partly by increase in the size of the cysts.

The cysticercus in the brain is surrounded by a wall of sclerosed neuroglia When the cysticercus dies and degeneration commences the tissues around also undergo active degenerative change The damaged area may now undergo necrosis and again become surrounded by a wall of sclerosed neuroglia.

In the course of time calcification of the cysticercus may occur, commencing frequently in the scolex. Distinctive radiographic appearances of the calcified parasite are described.

The diagnosis is made by demonstration of the larval form of *Tenia solium* in an excised cyst, by radiological examination, or by skin tests and complement fixation tests. The latter have not proved very satisfactory. Dixon and Smithers point out that diagnosis by means of X rays is unlikely within four or five years of infestation, and may be impossible at even later periods. Calcification occurs earlier in the muscles than in the brain—a point of practical importance. Nodules can often be felt in the subcutaneous tissues; but they tend to come and go, being impalpable before the death of the parasite and again after the absorption of the fluid content of the cyst. In Dixon and Smithers's series of cases the shortest period between the onset of symptoms and death was six days, the longest twelve years. In only five cases had the liability to fits ceased. The treatment at present is palliative only.

Medical practitioners should bear cysticercosis in mind when seeking a cause for epilepsy, especially if the patient has lived in a country where sanitation is primitive or where inadequately cooked pork is eaten. It is significant that only two of Dixon and Smithers's patients had never been abroad; and all save one (a sailor) were soldiers or members of soldiers' families. Measures of prophylaxis readily suggest themselves; the necessity for them should be impressed on any person infested with *Tenia solium* or, for that matter, *Tenia saginata*, which is not uncommon in this country. It would be remarkable if the cysticercus of *Tenia saginata* was not occasionally responsible for epileptic seizures or other manifestation of cerebral disease.

¹ The Quarterly Journal of Medicine, October, 1934.

Abstracts from Current Medical Literature.

THERAPEUTICS.

Parenteral Administration of Fluid.

ALEXIS F. HARTMANN (*The Journal of the American Medical Association*, November 3, 1934) discusses the subject of dehydration and the varying chemical changes which may occur as a result in the body fluids. From these theoretical considerations he builds up a therapeutic scheme whereby certain solutions of differing chemical composition are used in the various types of fluid loss. It is essential to remember in any such scheme that one can by chemical examination of the blood obtain proof of the loss of water, chloride, bicarbonate and total fixed base. The loss of potassium and calcium is not usually thus indicated, as their concentration in the blood tends to remain fixed, the tissue cells and bones acting as reserve depôts. Such information enables the administration of fluid to be further enhanced by the addition of the chemical substances necessary for a complete restitution. The physical state of the fluid to be administered is also to be considered, the more normal the colloidal osmotic pressure, the more successful will be the attempt to restore a normal circulation with a normal interchange of substances between the blood and intercellular fluid. Isotonic sodium chloride should go far towards the relief of dehydration, and so it does, but frequently it does not go far enough. With the addition of potassium and calcium as theoretically indicated in the same proportions as they exist in blood plasma, Ringer's solution results and is of value. In Locke's and Tyrode's modifications sodium bicarbonate is added in small quantity, but not to the full therapeutic indication, on account of the precipitation of calcium bicarbonate. In treating acidosis, therefore, it is necessary to give separate and controlled injections of Ringer's solution and bicarbonate or, alternatively, to avoid the chemical decomposition by the substitution of sodium lactate for bicarbonate. The author then gives a list of the various fluids he has used, their chemical composition and details of their preparation, together with the therapeutic indications for each. Thus Ringer's solution is indicated whenever chlorides and fixed bases are lost, as in vomiting and diarrhoea, pyloric and intestinal obstruction, diabetic acidosis and the terminal stage of glomerular nephritis. Eighty to one hundred cubic centimetres per kilogram of body weight, preferably given subcutaneously or intraperitoneally, is the usual dosage required. For all forms of acidosis other than that associated with congenital heart disease with persistent cyanosis, iso-

tonic sodium lactate solution is of value. It may also be used to obtain rapid alkalization of the urinary tract. The combined lactate and Ringer's solution is also helpful when a chemical study of the blood has not been made, as it will relieve either acidosis or alkalosis of the metabolic types. An average dose is eighty to one hundred cubic centimetres per kilogram of body weight. The addition of dextrose 10% provides the most suitable fluid for a continuous intravenous drip method of administering fluid. Sodium bicarbonate solutions are indicated in the same conditions as sodium lactate solutions, but it has many disadvantages. Dextrose is indicated when carbohydrate metabolism is low, when hypoglycæmia is present, when ketosis exists, or when there is depletion of muscle and liver glycogen. It is also useful in promoting diuresis in such conditions as acute nephritis with acute cerebral oedema. Acacia is especially indicated when the blood volume has been reduced as the result of hæmorrhage or shock. Through its effect in raising the colloidal osmotic pressure it tends to maintain blood volume. It should be administered intravenously, one to two grammes per kilogram of body weight being given in a 6% to 30% solution over a period of forty-five to sixty minutes, and this may be repeated daily until ten grammes per kilogram have been given. The uses of blood transfusion are also discussed.

Glycocolle.

C. I. URECHIA AND A. RETEZANU (*La Presse Médicale*, August 11, 1934) record the results of treatment in two cases of myopathy and one case of myasthenia. The patient with myasthenia was eighteen years old. She was given 15 grammes of glycocolle daily for one month. There was a definite, though not a marked, improvement. The creatine, creatinine, potassium and calcium in the blood were normal, and the sulphur was diminished. Treatment had no effect on the blood content of these substances. Treatment with extract of total suprarenal gland was also attended by improvement, and injections of extracts of *tuber cinereum* gave even better results; however, the patient died during an attack of influenza two months later. An improvement was also obtained in two patients, aged nineteen and twenty-one, afflicted with myopathies, by the oral administration of glycocolle. The high cost of this substance prevented continuation of the treatment, and the good effects were completely lost after a few weeks.

Scarlet Fever Immunization.

In early studies of diphtheria toxin it was observed that the toxin undergoes a spontaneous change on standing, with a resulting loss of toxicity which is not accompanied by a corresponding loss in ability to neutralize antitoxin.

Such a change may be accelerated by the addition of formaldehyde, and the resulting non-toxic substance that is still able to bind antitoxin and possess antigenic power is referred to by Ehrlich as toxoid. George Dick and Gladys Dick (*The Journal of the American Medical Association*, November 3, 1934) have endeavoured to determine whether there is any corresponding toxoid to be produced in scarlet fever toxin and capable of stimulating the production of antitoxin when injected into susceptible individuals. The scarlet fever toxin kept at ice-box temperature does not undergo a spontaneous loss of toxicity comparable with the change noticed in diphtheria toxin. Attempts have been made, therefore, to produce a scarlet fever toxoid by the treatment of the toxin with formaldehyde. In considering results of previously published work it was noted that none of the authors was able to detoxify scarlet fever toxin completely, though some used as high as 2% of a 40% solution of formaldehyde. It is significant that preparations of scarlet fever toxin containing the largest amount of formaldehyde gave the lowest percentage of immunity following the injection of formalized toxin, while the best results have been reported by those who use less than a 0.5% solution of formaldehyde. The better results obtained with toxin treated with smaller amounts of formaldehyde might be due to the presence of larger amounts of unaltered toxin. Details of various experiments performed by the writers are given, and from them the following conclusions are drawn. No evidence now available justifies the assumption that there is a scarlet fever toxoid analogous to diphtheria toxoid. Scarlet fever toxin is only partially detoxified by formaldehyde solution up to 1%, and the presence of unaltered toxin in this formalized preparation is sufficient to account for its immunizing properties. Alum precipitates diphtheria toxin, and toxins may be demonstrated in the precipitate, but the redissolved alum precipitate from scarlet fever toxin showed no evidence of the presence of toxin. Lastly, since the detoxified portion of formalized scarlet fever toxin is not antigenic, it is inferior to unmodified toxin as an immunizing agent because of the unnecessary amount of useless protein it contains.

Dental Fever.

R. THIBAUT and L. LEBOURG (*La Presse Médicale*, August 11, 1934) describe five patients in whom infection of the gums or of the roots of teeth gave rise to persistent fever. There was no obvious cause for the daily rise of temperature to two or three degrees above normal, and in all five patients tuberculosis was suspected. When this was excluded, mainly by radiological examination, it was found that the removal of infected teeth and the treatment of infected gums were followed by recovery.

NEUROLOGY AND PSYCHIATRY.

The Use of "Pyrifer".

J. ERSKINE HOWIE (*The Journal of Mental Science*, July, 1934) conducts numerous experiments on mental patients with "Pyrifer", a preparation of killed bacteria of the coli group. This is put up in seven different strengths, ranging from 50 million to 5,000 million bacteria per cubic centimetre. The dose used depends upon the patient's reaction to the initial injection. The preparation is administered intravenously. Its use is painless. The fever falls by lysis after the early injections, but after the third injection of "Pyrifer" the typical fever rhythm appears. The temperature rises sharply within the first hour and is usually accompanied by a rigor. It reaches its maximum height in the third hour; and the patient becomes afebrile in from four to eight hours. The injections are given on alternate days, and it is possible, so this author states, to produce regular attacks of fever of approximately equal temperature by the administration of increasing doses and to adapt the height of the fever to the physical condition of the individual patient. Headache and vomiting sometimes occur, but may be lessened by administering the "Pyrifer" to a fasting patient. The exhibition of "Luminal" is also distinctly helpful in such cases. The weight declines, but is rapidly regained during convalescence. There is a leucocytosis with a relative fall of lymphocytes and a shift to the left of the Arneth count during treatment. "Pyrifer" was successfully used in cases of neurosyphilis with results quite as good as those obtained in unselected cases with induced malaria. In the old and feeble patients it is better tolerated than malaria; it is more easily controlled. The results of "Pyrifer" therapy in the other psychoses were just as disappointing as those obtained by malaria or any other form of pyrotherapy.

The Criminal Insane.

RUDOLPH SCHWARZ (*Mental Hygiene*, July, 1934) studies the criminal insane under jurisdiction. He essays a definition of criminal insanity and attempts to show how the criminal who is insane can be differentiated from the criminal who is malingering. He agrees with Meyer Solomon that the crime of a criminal who is insane is one not consciously and purposely chosen. A person who shows obvious psychotic behaviour at the time of his crime may never reach the court; but confusion is almost bound to occur in court when the defendant appears to answer in a logical manner. The author makes the following distinction: An insane criminal is an individual who has always shown criminal tendencies and incidentally has developed a psychosis; a criminally

insane person is a mental patient who, on account of his lack of judgement, his impaired powers of discrimination or some other shortcoming of his diseased mind, has committed an act against the interests of society. It is difficult to define the position of the kleptomaniac or the pyromaniac. They are aware of the illegal aspect of their deeds, but are swept on by the pathological impulse. Their crimes are stereotyped, do not bring them any material benefit, and cause subsequent remorse. If one is properly guided by the history, the personality traits and the general irrational behaviour of the delinquent, it is seldom difficult to recognize the criminal acts of those of an insane person as distinct from the malingering. There is usually to be found supporting evidence of lack of premeditation, incoherence, and awkwardness of action, unnecessary force, unusual brutality, lack of sound motive and lack of an attempt to escape.

Failure at School.

SAMUEL C. KARLAN (*Mental Hygiene*, October, 1934) studies failure in secondary schools as a mental hygiene problem. Failure at school is not always due to lack of intelligence or poor mental endowment. According to this author, experience indicates that nearly 50% of those who fail in their secondary schools have more than the average intelligence. The author therefore sought the cause of this failure in the emotional lives of the pupils. Thirty-one such failures were studied. It was discovered that emotional problems and even psychopathic conditions might present failure at school as their first symptom. Inferiority feelings and attitudes of timidity were found responsible for failure in nine of the thirty-one pupils. Emotional instability, emotional immaturity and pampering in the school and home accounted for twelve other cases. Guidance has improved the work of most of these pupils by helping in the natural adjustment and developing of their personalities. Twenty-eight students out of thirty-one have, after investigation and guidance, completed two terms of work in one, after having previously failed in the same course. The results of this study indicate, in the words of the author, that failure in students with high intelligence quotients in secondary schools should be investigated from a psychiatric point of view and that proper treatment should be instituted.

Forced Spinal Drainage.

RALPH M. FELLOWS (*American Journal of Syphilis and Neurology*, October, 1934) gives details of the application and technique of forced spinal drainage and the report of a case of taboparesis wherein relief from gastric crises was obtained by this method. The lumbar puncture is made in the usual way and the cerebro-spinal fluid is allowed to drain

from the patient for from eighteen to thirty-six hours. Intravenous injections of hypotonic saline solution are given. This causes an increased flow of cerebro-spinal fluid. The author claims that from 2,000 to 5,000 cubic centimetres of hypotonic saline solution may be given in eight or twelve hours, during which time 200 to 300 cubic centimetres of cerebro-spinal fluid may escape. "Sodium amytal" or morphine is given as a sedative, if required. Four to five litres of fluid may be given orally. The idea is that the reduction of intracranial pressure to atmospheric pressure makes the intracranial conditions of fluid production conform to those of the rest of the body. At this pressure there is an active participation of all the capillary beds. The contraindications to forced spinal drainage are few: spinal block, obstructive hydrocephalus, cystic tumours, areas of fresh hæmorrhage with engorgement and necrosis. A case of taboparetic neurosyphilis is described, complicated by gastric crises, complete alleviation of which was brought about by forced spinal drainage, and no recurrence of the crises has been reported. The patient subsequently underwent a course of induced malarial therapy.

Basophile Adenoma of the Pituitary Gland.

D. S. RUSSELL, H. EVANS AND A. C. CROOKE (*The Lancet*, August 4, 1934) report the clinical and pathological histories of two cases of basophile adenoma of the pituitary gland. The syndrome described by Cushing as pituitary basophilism was imperfectly manifested in both cases. The prominent feature in both was cardiovascular hypertrophy. Obesity was present in both but atypical in one case. Bright's disease was the cause of death in one instance and in the other cerebral hæmorrhage complicated essential hypertension and primary ischæmic nephritis of moderate degree. In neither case was there any abnormal invasion of the posterior lobe of the pituitary by basophile cells. The authors state that their two cases, considered in conjunction with those reported elsewhere, suggest that the correlation between basophile adenoma, obesity and persistent high blood pressure is very close. These cases, it is claimed, show that the correlation, if it exists, is between basophile adenoma and high blood pressure as such, and not between basophile adenoma and chronic Bright's disease. The authors stress this point because of a recent report of the changes of malignant nephrosclerosis in two verified examples of basophile adenoma. Further work is needed to show whether basophile adenomata can also be demonstrated in types of chronic Bright's disease with secondary cardio-vascular hypertrophy other than malignant nephrosclerosis (*nephritis repens*).

British Medical Association News.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Medical Society Hall, East Melbourne, on December 5, 1934, Dr. GERALD WEIGALL, the President, in the chair.

ELECTION OF OFFICE-BEARERS AND MEMBERS OF COUNCIL.

The President announced that the Council had elected the following office-bearers:

President: Dr. Rupert M. Downes.

Vice-Presidents: Dr. Walter Summons and Professor R. Marshall Allan.

Chairman of Council: Dr. J. Newman Morris.

Honorary Treasurer: Dr. C. H. Mollison.

Honorary Secretary: Dr. J. P. Major.

The President announced that the following had been elected members of the Council by the general body of the members: Professor R. Marshall Allan, Dr. H. C. Colville, Dr. John Dale, Dr. A. P. Derham, Dr. R. M. Downes, Dr. E. M. Embelton, Dr. Mark Gardner, Dr. J. S. Green, Dr. Victor Hurley, Dr. L. S. Latham, Dr. F. Kingsley Norris, Dr. H. Douglas Stephens, Dr. B. M. Sutherland, Dr. B. T. Zwar.

The President announced that the following had been elected by the subdivisions: Dr. F. J. Bonnin, Dr. W. F. Brownell, Dr. J. A. Cahill, Dr. G. R. Davidson, Dr. C. H. Dickson, Dr. R. L. Fulton, Dr. O. B. Goyen, Dr. J. J. Kelly, Dr. J. L. M. Kneebone, Dr. J. P. Major, Dr. F. E. McAree, Dr. D. W. Neville, Dr. S. J. Newing, Dr. D. C. Pigdon, Dr. Walter Summons, Dr. Gerald Weigall, Dr. J. F. Wilkinson, Dr. Ian J. Wood.

The President announced that Dr. R. H. Fetherston, Dr. Frank L. Davies, Dr. C. H. Mollison and Dr. J. Newman Morris were the *ex officio* members of the Council.

The representative of the Victorian Medical Women's Society was Dr. Constance Ellis.

The President announced that the following had been coopted as members of the Council: Dr. G. A. Birnie, Dr. D. Roseby, Dr. John H. Shaw.

ANNUAL REPORT OF THE COUNCIL.

The annual report of the Council, having been circulated, was taken as read and adopted. The report is as follows:

The Council of the Branch and the Committee of the Society present the fifty-fifth annual report of the Branch and the seventy-ninth of the Society.

Election.

At the annual meeting held last December the following members of the Council and of the Committee were elected: Professor R. Marshall Allan, Dr. H. C. Colville, Dr. J. Dale, Dr. A. P. Derham, Dr. R. M. Downes, Dr. D. M. Embelton, Dr. M. C. Gardner, Dr. J. S. Green, Dr. T. E. Victor Hurley, Dr. L. S. Latham, Dr. F. Kingsley Norris, Dr. H. Douglas Stephens, Dr. B. M. Sutherland, Dr. B. T. Zwar.

The following were elected to represent the subdivisions: Dr. F. J. Bonnin, Dr. W. F. Brownell, Dr. J. A. Cahill, Dr. C. H. Dickson, Dr. R. L. Fulton, Dr. O. B. Goyen, Dr. J. L. M. Kneebone, Dr. J. P. Major, Dr. J. J. Kelly, Dr. S. J. Newing, Dr. F. E. McAree, Dr. D. C. Pigdon, Dr. W. A. Spring, Dr. W. E. Summons, Dr. A. R. Thorne, Dr. W. G. D. Upjohn, Dr. Gerald Weigall, and Dr. J. F. Wilkinson.

The Council, under Rule 8, coopted Dr. G. A. Birnie, Dr. Roseby, and Dr. J. Shaw, and elected Dr. Constance Ellis, nominated by the Victorian Medical Women's Society. The Trustees of the Medical Society of Victoria are members *ex officio*.

The Council elected the following office-bearers:

President: Dr. Gerald Weigall.

Vice-Presidents: Dr. R. M. Downes and Dr. W. E. Summons.

Honorary Secretary: Dr. J. P. Major.

Honorary Treasurer: Dr. C. H. Mollison.

Honorary Librarian: Dr. W. G. D. Upjohn.

And the Chairman of the Council, Dr. J. Newman Morris.

The Executive consists of the President, with other office-bearers, and the immediate past President, Dr. W. G. D. Upjohn.

Attendances at Council Meetings.

There were eleven ordinary and two special meetings of the Council, and the following shows the attendance:

Dr. F. K. Norris	13	Dr. Constance Ellis	8
Dr. W. Summons	13	Dr. J. S. Green	8
Dr. Gerald Weigall	13	Dr. S. J. Newing	8
Dr. J. Newman Morris	12	Dr. Mark Gardner	7
Dr. H. D. Stephens	12	Dr. L. S. Latham	7
Dr. B. M. Sutherland	12	Dr. W. F. Brownell	6
Dr. J. A. Cahill	11	Dr. John Dale	6
Dr. H. C. Colville	11	Dr. F. E. McAree	6 ¹
Dr. F. L. Davies	11	Dr. D. C. Pigdon	6
Dr. R. H. Fetherston	11	Dr. A. R. Thorne	6
Dr. D. Roseby	11	Dr. A. P. Derham	5 ²
Dr. J. F. Wilkinson	11	Dr. C. H. Dickson	5
Dr. Victor Hurley	10	Dr. O. B. Goyen	5
Dr. J. P. Major	10	Dr. J. H. Shaw	5
Dr. C. H. Mollison	10	Dr. R. L. Fulton	4
Dr. W. G. D. Upjohn	10	Dr. J. L. Kneebone	3
Dr. G. A. Birnie	9	Dr. D. M. Embelton	1 ¹
Dr. R. M. Downes	9	Dr. F. J. Bonnin	0
Dr. B. T. Zwar	9	Dr. J. J. Kelly	0
Professor R. Marshall Allan	8 ¹	Dr. W. A. Spring	0

The average attendance at each meeting was 23.6, and the highest attendance for any one meeting was 30.

Appointment of Committees.

The following committees were appointed by the Council (the first-named acted as convener at that committee):

Ethics: Dr. Major, Dr. Davies, Dr. Fetherston, Dr. Latham, Dr. Pigdon, Dr. Sutherland, Dr. Wilkinson, Dr. Zwar, and the executive.

Finance, House and Library: Dr. Mollison, Dr. Fetherston, Dr. Upjohn.

Legislative: Dr. Colville, Professor Marshall Allan, Dr. Davies, Dr. Green, Dr. Latham, Dr. Morris, Dr. Newing, Dr. Norris, Dr. Roseby.

Organization: Dr. Roseby, Dr. Brownell, Dr. Birnie, Dr. Colville, Dr. Gardner, Dr. Green, Dr. McAree, Dr. Major, Dr. Newing, Dr. Pigdon, Dr. Shaw, Dr. Summons, Dr. Sutherland, Dr. Upjohn, Dr. Weigall, Dr. Wilkinson, Dr. Cahill and representatives of country subdivisions.

Public Health and Public Questions: Dr. Gardner, Professor Marshall Allan, Dr. Brownell, Dr. Cahill, Dr. Dale, Dr. Derham, Dr. Ellis, Dr. Embelton, Dr. Norris, Dr. Roseby, Dr. Summons, and Dr. Stephens.

Services: Dr. Downes, Dr. Dale, Dr. Derham, Dr. Fetherston, Dr. Green, Dr. McAree, Dr. Shaw.

Science: Dr. Hurley, Dr. Colville, Dr. Downes, Dr. Ellis, Dr. McAree, Dr. Norris and Dr. Stephens.

Hospital: Dr. Zwar, Professor Marshall Allan, Dr. Birnie, Dr. Gardner, Dr. Hurley, Dr. Latham, Dr. Morris, Dr. Shaw, Dr. Thorne, and Dr. Wilkinson.

Standing Insurance: Dr. Embelton, Dr. Davies, Dr. Hurley, Dr. Major, Dr. Mollison, and Dr. McPhee.

Correspondence: Dr. Major and Dr. Morris.

Social Committee: Dr. Roseby and Dr. McAree.

¹Leave of absence.

²Absence through illness.

Special Committees.

Early Medical History: Dr. Howard, Dr. A. G. Black, Dr. Fetherston, Dr. Hooper, Dr. Meyer, Dr. Kenny, Dr. Norris, and Dr. A. Jeffreys Wood.

Yallourn: Dr. Wilkinson, Dr. Davies, Dr. Major, Dr. Morris, Dr. Robertson, Dr. Sutherland, and Dr. Zwar.

Appointments and Nominations.

President-Elect, British Medical Association, 1935-1936: Sir Richard R. Stawell.

Central Council, British Medical Association: Professor R. J. A. Berry.

Federal Council: Dr. Davies and Dr. Morris.

Annual Representative Meeting: Representative, Dr. Embelton; Delegates, Dr. L. J. Clendinnen and Dr. E. J. Grieve.

Victorian Bush Nursing Association: Dr. Sutherland and Dr. Weigall.

City Electoral Roll: Dr. Hurley, Dr. Major, and Dr. Shaw.

Free Kindergarten Union: Dr. Weigall.

Victorian Baby Health Centres Association: Dr. Derham.

Melbourne University Association: Dr. Stephens.

Victorian Institute of Hospital Almoners: Dr. Morris.

Lord Mayor's Fund: Dr. Morris.

Medical Advisory Committee, Education Department: Dr. Zwar.

Victorian Council for Mental Hygiene: Dr. Dale and Dr. Derham.

Melbourne Permanent Post-Graduate Committee: Dr. Major, Dr. Upjohn, and Chairman of Science Committee.

Big Brother Movement: Dr. Weigall.

The Society for Health of Women and Children of Victoria: Dr. B. L. Stanton.

Medical Officers' Relief Fund, Advisory Committee: Dr. Mollison, Dr. Davies, and Dr. Upjohn.

Australian Aerial Medical Services: The President.

Nurses' Board: Dr. R. W. Chambers.

Medical Board of Victoria: Dr. Morris.

Standing Appointments.

Trustees of the Medical Society of Victoria: Dr. Davies, Dr. Fetherston, Dr. Mollison, and Dr. Morris.

The Advisory Committee to the Charities Board: Dr. Hurley, Dr. Embelton, Dr. Latham, Dr. Morris, Dr. McPhee, Dr. Wilkinson, and Dr. Zwar.

Queen's Memorial Infectious Diseases Hospital: Dr. Morris.

Victorian Correspondent, "The British Medical Journal": Dr. Derham.

British Medical Agency Company of Victoria Proprietary Limited: Directors, Dr. Mollison (Chairman) and Dr. Fetherston; Managing Director, Mr. W. Ramsay.

British Medical Insurance Company of Victoria: Directors, Dr. Mollison (Chairman), Dr. Fetherston, Dr. W. Kent Hughes, and Dr. Morris; Secretary, Mr. A. M. Ford.

Board of Australian Inland Mission: Dr. J. W. Dunbar Hooper.

Masseurs' Registration Board: Dr. Downes and Dr. W. S. Johnston.

Fifth Australian Cancer Conference: Dr. K. S. Cross.

Australian and New Zealand Association for Advancement of Science, January, 1935: Professor W. A. Osborne.

Membership Roll.

The number of members on the roll is 1,293, which is 20 more than that of last year. Seventy-eight names were added (37 by election, 21 who paid arrears, and 20 by transfer into the Branch). Fifty-eight were removed (17

by death, 6 by resignation, 12 by transfer out of the Branch, and 23 who allowed their subscriptions to fall into arrears). Three Associates have been added to the list, making a total of 32.

We have to record with regret the death of the following members and associates: Dr. J. F. Anderson, Dr. J. H. Bennett, Dr. Alban Best, Dr. H. T. Bourne, Dr. W. A. Bowman, Dr. John Box, Dr. P. Denton Fethers, Dr. J. W. Harbinson, Dr. Lionel Hood, Dr. G. T. Howard, Dr. Oswald Joynt, Dr. T. E. L. Lambert, Dr. P. O. Lord, Dr. H. R. Maclean, Dr. Frank A. Nyulasy, Dr. H. H. Osborn, Dr. J. H. Semple, Dr. Josephine Stack, Dr. R. W. Telford.

The Council resolved that attendances of members at committee meetings should be published in the annual report, but it should be borne in mind that members of the Council have had other duties to perform and in some instances were members of committees which met at the same time.

Ethics Committee.

The committee met nine times. The following were the attendances at the Ethics Committee:

Dr. Major	9	Dr. Morris	5
Dr. Weigall	9	Dr. Upjohn	5
Dr. Wilkinson	8	Dr. Sutherland	4
Dr. Fetherston	8	Dr. Summons	3
Dr. Pigdon	7	Dr. Latham	1
Dr. Downes	6	Dr. Zwar	0
Dr. Davies	6	Dr. Mollison	0

The name of the Australasian Massage Association has been added to the list of bodies published in the Ethical Principles before which public lectures may be given by members without seeking permission of the Council.

The circular *re* holiday consultations was again issued to members setting forth the way in which the resident medical practitioner's rights should be conserved.

The Health Association having published an incomplete geographical list of medical practitioners which it had been informed would be objectionable, the Council resolved not to appoint any representatives on that body until an assurance was received that no similar list would be published in future.

A member was informed that in visiting a country town he could inform the local doctors by letter or card of his specialty, but he could not inform private individuals. He could have a notice at the place he visits giving his specialty and stating that appointments might be booked within. It would be preferable to arrange for a private professional chamber rather than that he should practise at an hotel.

A ruling was given that a doctor's name should not appear in a prospectus as the medical officer of a school or college.

Two special cases were submitted for the opinion of the Council which decided that it would be a breach of confidence for a medical practitioner to disclose to a clergyman who was being blackmailed by a woman, the mentality of this woman; and that in a case of doubtful parentage, it was not right for the wife's medical attendant to inform the husband whether a child born to his wife was full term.

Organization Committee.

There were twelve meetings of the Organization Committee, at which the attendances were as follows:

Dr. Roseby	12	Dr. Sutherland	8
Dr. Cahill	11	Dr. McAree	3
Dr. Summons	11	Dr. Wilkinson	3
Dr. Birnie	9	Dr. Newing	2
Dr. Gardner	9	Dr. Pigdon	2
Dr. Weigall	9	Dr. Upjohn	1
Dr. Brownell	8	Dr. Green	0
Dr. Shaw	8	Dr. Major	0

A summary of all decisions with regard to the lodge agreement and its interpretation was prepared and was presented to a meeting of lodge medical officers. The

decisions had already been published in the annual reports during the past twelve years, but it came as a surprise to many of those present to learn that they had been receiving from the lodge secretaries payment less than that laid down in the agreement.

It was learnt that at least one society had short-paid its medical officers for ten years as regards female members. It was asked to instruct the local secretaries to pay 5s. a quarter from the beginning of the following quarter.

By the Interpretations Committee in 1922 it was agreed that certain districts within the metropolitan area should be regarded as country, and the medical officers should receive country rates. For years the medical officers had allowed the secretaries to pay them the metropolitan rate. Representations were made to the executives of the orders, and they have instructed their secretaries as to their duties in this regard.

One order insisted that where a member paid arrears to the lodge and his name had been reinstated on the medical officer's list, the secretary must pay the medical officer all arrears.

The Council had agreed with one friendly society that where a member's name had been inadvertently left off a medical officer's list, such medical officer would be entitled to payment for the whole period the member's name was so omitted; and that such payment would then safeguard the member's interests and entitle him, during such period, to the services ordinarily provided by the medical agreement. When it was found that such cases were numerous, the Council rescinded its former resolution and resolved that the only contract between the lodge medical officer and the lodge secretary should be on the basis of the medical list supplied to the medical officer at the beginning of each quarter. Members not on the list who were treated by the medical officer should be regarded as private patients and charged private fees.

It was ruled that the medical officer was entitled to payment for a certificate of health for the wife of a member who had been examined at the request of the secretary of the lodge.

A medical officer was advised to send in an account to a member for a sigmoidoscopy, such not being regarded as services coming under the scope of the agreement.

The Tramways' Benefit Society established an operating theatre at Capitol House and proposed to appoint specialists. The Council protested against such appointments, as they would interfere with the private practice expected by lodge medical officers from the members on their lists. The society was informed that the scope of the work carried out in the operating theatre should be limited to minor operations on patients whose post-operative condition was such that they could safely be removed to their homes on the same day. Also that before any operation each patient must be referred to his own medical officer who would arrange for the operation. Any medical officer may send his lodge patients to this operating theatre. These resolutions will be subject to revision in January next.

The Grand Orders were informed that ophthalmological appointments to lodges should be made only under certain conditions, such as an open panel, eligibility of specialists to be placed on the panel, and payment per visit by the patient at a reduced fee; and that the specialist should attend the member only on the recommendation of the medical officer; that acceptance of appointments by our members is conditional upon the observance of these conditions; that all agreements must be in writing; that this arrangement will apply for all future agreements.

Neither the *Education Act* nor its regulations require a medical certificate for absence of children from school, but a reasonable excuse from the parent must be furnished.

The responsibility of the anaesthetist or surgeon in the event of a death during anaesthesia has not yet been laid down either in the English or the Victorian courts of law. The Council replied to an inquiry in terms of the dictum set forth in *The British Medical Journal*, June, 1933, that: "It is practically certain that the surgeon could

never be held liable for the mistake of the anaesthetist unless he had reason to doubt his competency."

On the representation of the Council to the Minister of Lands, the claims of doctors practising in the Mallee will receive the same consideration as in former years from the Closer Settlement Commission.

The Committee of the King Island Cottage Hospital, in making a new appointment, decided to reduce the incoming medical officer's salary as well as to limit his outside practice. A protest was made to the Committee, and no alteration was made in the contract.

The decisions of the Council during the past fourteen years with regard to the remuneration of medical practitioners in general practice were presented to the Council and filed for reference.

The Public Works Department agreed that whenever a departmental officer asked for medical treatment of a member of the department, it would be responsible for payment of the first service. This practice has been observed by the Tramways Board, the Police and Railways Department.

A public solicitor who is appointed to handle cases of indigent persons requested the full clinical history of a case and a statement whether an accident was the cause of death. The question arose as to who should pay the doctor for his services. The widow of the deceased was unable to do so, and the public solicitor stated that he had no funds. After some correspondence the Attorney-General informed this Council that the Crown Law Department would in future pay the sum of 10s. for each certificate so furnished by a medical practitioner in private practice.

Arrangements were made with the Australian Broadcasting Commission for a series of lectures on medical subjects to be given over the air. Sir Richard Stawell gave the first lecture, and this was followed by the President of the Branch, the other lecturers remaining anonymous. The lectures were relayed throughout the States, and it is possible that the experiment will be repeated.

Hospital Committee.

This committee met on six occasions. The following were the attendances:

Dr. Birnie	6	Dr. Shaw	4
Dr. Zwar	5	Dr. Allan	3
Dr. Wilkinson	5	Dr. Gardner	3
Dr. Hurley	4	Dr. Morris	2
Dr. Latham	4	Dr. Thorne	1

The Lord Mayor's Contributory Scheme offered to factory employees the services of the hospital at one penny in the pound of wages per week, but no provision was made for the payment of medical services. A conference of representatives of medical staffs of public hospitals, including clinical assistants, met on May 1. Members of the honorary medical staffs claimed the right to say who should receive free treatment in public hospitals. It was laid down that the Contributory Scheme must not be connected with the Lord Mayor's Fund, and must include medical benefits. As a result of negotiations between representatives of the Lord Mayor's Fund and the Victorian Branch of the British Medical Association, it was agreed: That the name of the contributory scheme be "The Hospitals Savings Association of Victoria for Contributions towards Hospital and Medical Expenses". The contribution was to be a flat rate of 6d. for those with dependants, and 3d. for those without. The hospital and medical benefits were defined. The parties are now within reach of agreement upon terms consistent with Branch principles. Contributions will be allocated in definite proportions to administration, contingency, hospital maintenance and medical funds. For patients treated in public beds of a public hospital a definite amount will be paid to the credit of a medical staff fund to be applied in a manner and for such purposes as the respective hospital medical staffs, with the approval of the Branch Council, may from time to time determine.

Representations were made to the Chief Secretary when preparing a Third Party Accident Insurance Bill for Parliament to make compulsory the insurance of all motor cars, and to members of Parliament when considering it to incorporate provision for the payment of medical services rendered to injured persons on the roadside, in the doctor's surgery, in hospitals—whether private or public—and in the injured person's home. The Bill, which was presented without the necessary provisions, has not yet been passed.

The Council approved of the honorary medical officers of the Geelong Subdivision notifying the Geelong Hospital Committee that they would cease honorary medical services to infectious patients, after October 31. A circular letter is being issued to the honorary medical staffs of all public hospitals, requesting them to notify to the committee of management that they, too, will cease to give honorary service in the treatment of infectious diseases.

A letter was sent to the chairman of each public hospital committee, advising that the Council was of opinion that a minimum of £100 per annum should be paid to the junior resident medical officers of public hospitals. Where this amount or more had not already been paid, the committees agreed to pay £100 in the future.

The Branch adopted a series of resolutions with regard to intermediate and private patients in wards of public hospitals in the larger centres. The accommodation should be under separate management in separate buildings, and there should be adequate representation of the medical profession on the management. No patients should be admitted to these wards without the written recommendation of a medical practitioner, except in cases of accident and emergency. The resolutions also provided for patients transferred from the public portion of a hospital to the intermediate or private section of that hospital; the patient's usual medical attendant should be notified.

To relieve the crowding of out-patients at public hospitals, an arrangement has been made whereby patients who are able to pay a small fee for treatment will be referred to their private medical attendant with a letter stating their ability to pay a small fee.

The Standing Insurance Committee, having completed its labours, ceased to function in August last. The thanks and appreciation of the services of Dr. Embelton (Chairman), Dr. Hurley (Acting Chairman), and members of the committee were recorded on the minutes.

The report of the financial position of the fund will be presented to the monthly meeting in February.

Finance, House and Library Committee.

This committee met on ten occasions, and approved of accounts submitted to it.

The attendances were as follows:

Dr. Mollison	10	Dr. Upjohn	8
Dr. Fetherston	10		

During the year the British Medical Insurance Company took up a number of the Medical Society debentures which members desired to have redeemed. The rate of interest was voluntarily reduced from 7% to 5% as from October 15 last.

Dr. Constance Ellis presented a study in oils of the late Sir Harry Allen, by Mr. E. Phillips Fox, and this has been framed and hung in the Council Room.

Attention has been paid to the heating and ventilation of the hall.

The balance sheets of the British Medical Association and of the Medical Society of Victoria will be presented to the monthly meeting in February next year.

Librarian's Report.

There has been a continuance of the increasing use of the library by members of the Association. Since the last report, 1,358 volumes have been borrowed, an increase of 96 beyond last year's record volumes.

The grant from the British Medical Insurance Company has enabled the Branch to continue purchasing the latest works of reference, and the library has the reputation of

being so well equipped with books and periodicals that every year an increasing number of requests are made for extracts from the literature available in the library. These requests come from our country members, and from members of Branches in other States. So far as possible, these requests have been complied with through the services of the existing library staff and through the gratuitous help of some city members.

It is obvious that the usefulness of the library could be more widely extended to a greater number of our members by a full development of this phase of activity. To reach this development, however, the Association would be involved in an expenditure which cannot be incurred at present.

The library has to function both as a lending library and a reference library in order to be of the greatest service to the greatest number of its users, but as the library does not possess duplicates of all its periodicals and works of reference, it necessarily happens that the two functions at times interfere with one another.

This has been lessened year by year by encouraging members to give their privately bought books and periodicals to the library so that we have one set available for lending and another for reference permanently in the library. We invite members, particularly specialists, to pass on their literature to the library and so increase its usefulness to the members generally.

By purchase and donation 132 new books have been added during the last year.

The *Archives of Disease in Childhood* was added to the periodical section.

We have to thank the following for books and periodicals received from them during the year: Dr. Marcel Crivelli, Dr. Kent Hughes, Dr. G. P. O'Day, Dr. H. Shannon, Dr. R. H. Fetherston, the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, the College of Physicians, Philadelphia, the Commonwealth Statistician, the Council of Scientific and Industrial Research.

Legislative Committee.

This committee met on three occasions, and the attendances were as follows:

Dr. Colville	3	Dr. Morris	1
Dr. Allan	2	Dr. Green	0
Dr. Davies	2	Dr. Latham	0
Dr. Norris	2	Dr. Newing	0
Dr. Roseby	2		

Branch Convocation.—After a long correspondence with the Home Association, permission was given to constitute a branch convocation which should have general control and direction of the policy and affairs of the Branch. Rules governing the convocation were adopted by the annual meeting, December, 1933, and nominations for convocation were called for in October, 1934, and representatives of convocation were elected. When the Branch Council has decided to call together the Branch Convocation, matters for discussion will be submitted to the secretaries of the subdivisions, who will call meetings of their members and instruct their representatives.

Members were informed with regard to the regulations of the *Dangerous Drugs Act* that chemists had been instructed not to dispense any irregular prescriptions without reference to the doctor.

The regulations were published in THE MEDICAL JOURNAL OF AUSTRALIA, May 19, page 672, and the attention of members was drawn to them.

A deputation waited on the Minister in March with the object of having disabilities under the *Medical Act*, 1933, which operate against local graduates, removed. A reply was received that the Act would be amended next year so as to give the Medical Board power to modify the procedure in respect of the registration of graduates of the University of Melbourne.

Public Health and Public Questions Committee.

There were six meetings of the Public Health and Public Questions Committee, and the following is the record of attendances:

Dr. Roseby	6	Dr. Brownell	4
Dr. Summons	6	Dr. Dale	4
Dr. Ellis	6	Dr. Derham	3
Dr. Cahill	6	Dr. Allan	2
Dr. Gardner	5	Dr. Stephens	2
Dr. Norris	5		

A letter was sent to the Minister of Health asking for a deputation which would urge that all examinations for tuberculosis and diphtheria should be free to practitioners in the interests of public health. The Secretary of the Public Health Department refused to arrange a deputation, but two members of the Council waited on the Premier, and it was agreed that if the municipalities could be induced to pay voluntarily for the work which the University Bacteriology Department did on their behalf, the charge to private doctors might be remitted. A conference was called in November, when a representative committee of interested bodies was formed to interview the Premier.

The committee discussed the question of the importation of heroin; and its determination came before the Federal Council.

An effort was made to check the broadcasting of medical talks by unqualified persons from the commercial stations, but without success.

A member of the Branch asked permission of the Council to establish a racial hygiene clinic. The Council was of opinion that the time had come when facilities for instruction in birth control under medical supervision should be available to the public; such work should be carried out in connection with a recognized charitable medical institution. Provided that this member conformed to these conditions he could institute the clinic.

Science Committee.

This committee met on six occasions, and the attendances were as follows:

Dr. Hurley	6	Dr. Colville	3
Dr. Norris	6	Dr. McAree	2
Dr. Downes	4	Dr. Stephens	2
Dr. Ellis	4		

The syllabus of scientific meetings for the year consisted of: 10 monthly meetings, 3 country Branch meetings, 1 special meeting, 6 clinical meetings, and 11 afternoon post-graduate meetings.

The following were the lecturers and the subjects dealt with:

Monthly Meetings.

February.—Dr. L. B. Cox and Mr. H. C. Trumble: "Tumours of the Brain from the Standpoint of the Clinician, the Pathologist and the Surgeon."

March.—Mr. R. M. Downes: "Present-Day Neurological Surgery."

April.—Professor H. A. Woodruff: "Some Researches into Animal Medicine with Important Bearings on Human Medicine."

May.—Dr. Frank May: "Some Observations on Physical Therapy."

June (in conjunction with the Section of Urology).—Mr. Julian Smith, Senior: "Problems in Urology."

July.—Dr. S. Pern: "The Part Played by Focal Infections in Medicine Today."

August.—Mr. C. J. Officer Brown: "The Deaths from Appendicitis."

September (in conjunction with the Gynaecological and Obstetrical Section).—Dr. W. I. Hayes: "Caesarean Section." Dr. Elliott True showed a cinema film: (a) "The Classical Caesarean Section"; (b) "The Lower Segment Caesarean Section."

October.—Dr. Eric Cooper: "Pulmonary Tuberculosis."

November.—Professor R. Marshall Allan: "The Management of Breech Presentation."

Branch Meetings in the Country.

May 12, at Geelong (Geelong and District Subdivision).—Dr. Keith Ross: "Paralytic Ileus." Dr. Stewart Cowen: "Microcytic Anæmia."

August 18, at Warragul (Gippsland Subdivision).—Dr. D. I. Fitzpatrick: "Osteomyelitis." Dr. Ivan Maxwell: "Allergy in Theory and Practice."
December 1, at Horsham (North-Western Subdivision).

Special Meeting of the Branch.

May 7.—Dr. A. Lufkin, of Los Angeles: "Pyorrhœa Alveolaris" (by courtesy of the Dental Board of Victoria).

Clinical Meetings.

May: Melbourne Hospital.

August: Women's Hospital and Eye and Ear Hospital.

September: Alfred Hospital.

October: Pædiatric Society at the Children's Hospital.

November: Saint Vincent's Hospital.

Post-Graduate Lectures.

A series of eleven afternoon lectures was arranged, and there was a good attendance at each:

May 24: "Allergic Conditions in General Practice", Dr. L. A. I. Maxwell.

May 31: "Ovarian Tumours", Mr. Robert Fowler.

June 7: "The Use of Artificial Pneumothorax in the Treatment of Chest Conditions, Reviewing Briefly Over Twenty Years' Use of the Method", Mr. S. V. Sewell.

June 14: "Clinical Aspects of Diverticulitis of the Colon", Mr. W. E. A. Hughes-Jones.

June 21: "Acute Conditions of the Ear and Upper Respiratory Tract", Mr. G. C. Scantlebury.

June 28: "Causation and Treatment of Arthritis and Allied Conditions, with Reference to Report of The British Medical Association Committee, June 17, 1933", Dr. H. Pern.

July 5: "Urinary Infections", Dr. H. Mortensen.

July 12: "Injuries of the Eye and its Vicinity", Dr. A. S. Anderson.

July 19: "Skin Conditions of General Interest", illustrated by lantern slides, Dr. John Kelly.

August 9: "Vaginal Discharges: Their Significance and Treatment", Dr. R. W. Chambers.

August 16: "Pains in the Legs", Dr. J. F. Mackeddie.

Federal Council.

The Federal Council met in Hobart in January and in Sydney in September. Full reports of its proceedings are set out in THE MEDICAL JOURNAL OF AUSTRALIA of February 10, page 204, and September 15, page 364.

Fourth Australasian Medical Congress (British Medical Association), Hobart, January, 1934.

Three hundred attended the Congress in Hobart, of whom 61 were from Victoria. Extraordinary hospitality was extended to the visitors. The meeting was a success in every way.

The One Hundred and Third Annual Meeting of the British Medical Association (Melbourne), 1935.

This meeting will be held in Melbourne from September 9 to 14, 1935, and will be presided over by Sir Richard Stawell, who was made President-Elect, 1935-1936, at the annual representative meeting, 1934. The General Executive is making extensive arrangements for welcoming the visitors. So far the estimated attendance from overseas is 300. In view of this fact it is hoped that members will support the Executive in its financial obligations to the best of their ability.

Sir Richard Stawell Oration.

Dr. A. E. Rowden White placed at the disposal of the Council bonds of the value of £1,000 to establish a Sir Richard Stawell Oration in honour of the great service the latter had rendered to the medical profession. The first oration was delivered by Dr. C. Bickerton Blackburn, of Sydney, at the Medical Society Hall on October 12, the subject of his oration being "The Teaching of Clinical Medicine".

Second Embley Memorial Lecture.

Dr. Z. Mennell, of London, has been invited to deliver the second Embley Lecture, to be given during the annual meeting in September.

Syme Memorial Lecture.

Mr. B. T. Zwar will deliver this lecture, which will be given in March, 1935.

Dr. W. G. D. Upjohn.

A resolution was passed expressing regret that Dr. Upjohn was severing his connexion with the Council and hoping that in the near future he would be able to take up his position again. He has been the Honorary Librarian since 1924, during which period the value of the library has grown very greatly.

Medical Secretary.

The Council felt that the time was opportune for the appointment of a full-time medical secretary at the termination of the appointment of the present Secretary, Mr. C. Stanton Crouch. Dr. C. H. Dickson was chosen, and his duties will commence on January 1 next. Mr. Edgar Ward has been appointed Assistant Secretary.

Retirement of Mr. C. Stanton Crouch.

Mr. Crouch's tenure of office as Secretary of the Branch expires on December 31, 1934. He has held this position for twenty years and, having reached the retiring age, the Council desires to place on record the valuable services he has given to the Branch and to express its good wishes towards him for the future.

The King's Colours, Australian Army Medical Corps.

By direction of the Minister of Defence the King's Colours which were presented to the Australian Army Medical Corps after the South African War will be sent to Sydney following the annual meeting, 1935.

The British Medical Agency, Proprietary, Limited.

The Directors desire to report a fairly successful financial year. Owing to the depression the turnover was not as much as they could have wished, although the results were satisfactory.

There is still a great need of cooperation between the members of the Branch and the Agency. The Directors feel that the members do not realize that it is to their interest to support their agency, and desire all members to give the agency their sole support. In many cases this has not been done.

C. H. MOLLISON,
Chairman of Directors.

The British Medical Insurance Company of Victoria, Limited.

The company has now been operating for over eight years, and its accounts have always shown a good return upon the amount of business which it has transacted. It was formed to give members of the profession the advantage of cheaper insurance, and that it has fulfilled a need has been shown by the way it has been supported.

The company was first in the field with a liberal motor car comprehensive policy, at a very reasonable rate of premium. It caters for most insurance needs, including fire, burglary and the like, and transacts life assurance in the capacity of an agent for the Australian Mutual Provident Society.

During the last few years the company has been purchasing, out of its profits, books for the library of the Medical Society of Victoria, and at the end of the last financial year the directors transferred to a special donation account £1,250 towards the expenses of the 1935 annual meeting of the British Medical Association.

They also granted £500 to the Medical Society of Victoria, and this amount almost certainly will be given annually.

Fifty pounds was granted to the Ballarat Subdivision of the Victorian Branch for the purchase of books.

These appropriations total £1,800 for the year and very clearly show that the Insurance Company is a valuable asset to the British Medical Association.

C. H. MOLLISON,
Chairman of Directors.

The Melbourne Permanent Post-Graduate Committee.

The chief interest of the Committee during the past twelve months has been the visit of Professor David Barr, of St. Louis, United States of America, to deliver a series of lectures, dealing mainly with endocrinology.

The arrangement was made possible through the goodwill of Professor Evarts Graham, who acted as overseas lecturer for the Committee in Melbourne in 1930.

Professor Barr proved to be not only a lecturer of the highest order, but also a most stimulating personality. He visited the University and the various hospitals, showing the keenest interest in all phases of medical education in this city. He has reinforced the bond between the medical schools of Melbourne and St. Louis, which Professor Evarts Graham had formerly done so much to strengthen.

The annual refresher course was held this year concurrently with Professor Barr's lectures. The numbers attending were the smallest so far enrolled. It is probable that the general economic position has contributed to this result, and the activities of post-graduate committees in the other States must also have limited the numbers visiting Melbourne from other parts of Australia.

Plans for increasing cooperation between the various post-graduate committees are gradually assuming shape. A conference for the purpose was held during the congress in Hobart last January, and a similar meeting took place in Adelaide during the meeting of the Association of Physicians in September last.

During the year lecturers, under arrangements made through the Committee, have visited various country centres, including Warrnambool, Ballarat and Hamilton.

The annual obstetrics course was held at the Women's Hospital in September and October. Now that this special course has become an annual fixture it is hoped that more advantage will be taken of the facilities thus afforded.

It has been decided that in 1935 no arrangements for a refresher course or an overseas lecturer will be made, in view of the annual meeting of the British Medical Association, which is to take place in Melbourne next September.

During the period under review the Council has been represented on the Committee by Dr. Major and Mr. Upjohn. Mr. Hurley, as convener of the Science Committee, has been *ex officio* a member of the Committee.

W. W. S. JOHNSTON,
Honorary Secretary.

Congratulations.

Dr. E. S. J. King was congratulated on winning for the second time the Jacksonian Prize.

Dr. F. M. Burnet received the congratulations of the Council on his being awarded the Stewart Prize, 1935. He had been selected for this honour by the Central Council in recognition of outstanding merit in the investigations into the mode of action of bacteriophage and into the nature of virus diseases. The certificate and prize will be presented at the annual meeting in September next.

Mr. Downes was congratulated on his appointment as Director-General of Medical Services for the Commonwealth of Australia.

The President was congratulated on his appointment as honorary medical officer to His Royal Highness the Duke of Gloucester during his stay in Victoria.

Dr. J. Newman Morris was appointed by the Governor, in-Council a member of the Medical Board of Victoria, to fill the vacancy caused by the death of Dr. George Howard. It is worthy of note that this is the first occasion on which the Government has asked the Council to make a nomination to fill a vacancy on the Medical Board, and a letter of thanks was sent to the Premier, Sir Stanley Argyle.

Dr. A. R. Thorne, who resigned his position on the Council, was thanked for his services during the past four years and was congratulated on his appointment to the position of Superintendent of the Wellington Hospital Board.

Golf.

A golf tournament for the championship of the Branch for a cup presented by the President, Dr. Gerald Weigall, was played on the links of the Royal Melbourne Golf Club on September 27 and was won by Dr. R. P. Booth. A handicap event for a cup presented by Dr. D. Roseby, Chairman of the Social Committee, was won by Dr. L. W. Johnston. There were 99 entrants and 94 starters. These trophies will be presented at the annual meeting of the Branch. Each of the winners will also receive a miniature cup. Arrangements have been made for cricket and bowls with a parliamentary team and with other athletic bodies. It is expected that much benefit will arise from these social functions.

The Victorian Medical Benevolent Association.

The work of the Association has been carried on quietly during the year. Not many applications for assistance have been made, a fact which, it may be hoped, is an indication of the prudence and foresight of the members of the profession. Substantial help has been afforded to an aged and needy doctor, and to the widow of another who was left with three children very ill provided for. The Committee records its sorrow on the death of its senior Vice-President, Dr. G. T. Howard, after many years of valuable service. The outstanding event of the year was the remarkable response made by the members of the British Medical Association to the request that they should become members of the Victorian Medical Benevolent Association. To this the great majority has acceded. The Committee hopes that year by year their subscriptions may be renewed. This will provide an assured income to meet calls for benevolence, any surplus being added to the capital fund.

E. L. GAULT,
Honorary Secretary.

Reports of Subdivisions.

Metropolitan Subdivisions.

Southern Suburban Subdivision.—A meeting was held at Dr. Weigall's residence at Elwood to consider an advertisement of a private hospital offering an inclusive fee for nursing and medical attention. The matron of the hospital was asked to remove from the advertisement any reference to medical fee, and was informed that if any medical practitioner was summoned in an emergency to attend a midwifery case he would abide by the scale of fees set out in the schedule of the *Midwifery Act*.

ALAN R. TATE,
Honorary Secretary.

Country Subdivisions.

North-Eastern Subdivision.—The local members gave their support and advice in the development of the Wangaratta Base Hospital, where a new infectious diseases block has been lately completed. An X ray plant has also been installed.

E. W. HANDS,
Acting Honorary Secretary.

Gippsland Subdivision.—During the past year two meetings were held, the first being at Yallourn, May 5, 1934, when Mr. Robert Fowler read a paper on "Uterine Hæmorrhage". The second meeting was a most successful Branch meeting, held at Warragul, August 18, 1934; about 40 members (metropolitan and local) attended. Following the usual clinical afternoon and a dinner, papers were read in the evening by Dr. Ivan Maxwell ("Allergy in Theory and Practice"), and by Dr. Fitzpatrick ("Acute Osteomyelitis").

CONRAD M. LEY,
Honorary Secretary.

Goulburn Subdivision.—Three meetings were held during the year as follows:

(a) A meeting at which a representative of the Colonial Mutual Life Assurance Society gave an address on the subject of the Society's system of insurance for medical and hospital services.

(b) A post-graduate meeting, at which two lectures were given through the courtesy of the Melbourne Permanent Post-Graduate Committee.

(c) The annual meeting, at which the following office-bearers were elected: President, Dr. F. W. Grutzner (Shepparton); Vice-President, Dr. R. O. Mills (Shepparton); Honorary Secretary, Dr. A. L. Bennett (Mooroopna); Committee, Dr. N. Parker and Dr. C. H. Dickson, with President and Honorary Secretary; Representative on Council of British Medical Association, Dr. C. H. Dickson; Representative on Advisory Board of Mooroopna Hospital, Dr. F. W. Grutzner.

ANNIE BENNETT,
Honorary Secretary.

Geelong Subdivision.—The subdivision comprises some thirty active members, with an average attendance at meetings of twenty. During the year four general meetings were held, and three clinical lectures were given as follows: Mr. Alan Newton: "Gall-Bladder Surgery." Dr. Leonard Cox: "Brain Tumours as Met with in General Practice." Professor C. I. McLaren (Korea): "Nervous Breakdown as Met with in General Practice." During the year, at the invitation of the Council of the Victorian Branch, the subdivision conducted a week-end Branch meeting at Geelong. Cases were shown by local members, and at the evening session papers were read by Dr. S. O. Cowen ("Microcytic Anæmia") and by Dr. Keith Ross ("Paralytic Ileus"). The meeting was very well attended, there being some thirty-three Melbourne members present.

KENNETH C. PURNELL,
Honorary Secretary.

Reports of Sections.

Urology.

The Section of Urology was formed early in 1934. The inaugural address was given to all members of the Branch by Dr. Julian Smith, Senior, entitled "Problems in Urology", and was closely followed by a large audience and evoked considerable discussion. A clinical meeting was held at the Melbourne Hospital, at which Mr. J. T. Taft showed cases illustrating "Failures in Urological Surgery".

HENRY MORTENSEN,
Honorary Secretary.

Anæsthesia.

Two ordinary meetings and one special meeting of the section have been held. Dr. H. C. Disher is the President for 1934. There are fifteen members.

ERIC N. GANDEVIA,
Honorary Secretary.

Ear, Nose and Throat.

At the annual meeting of the section held in February of this year at the Victorian Eye and Ear Hospital, Mr. Eric Gutteridge was elected President, and Mr. Puckle Vice-President, with Mr. Norman Eadie and Mr. T. Millar Honorary Secretary and Treasurer respectively. Five meetings have been held, and good attendances reported. A combined meeting with the Radiological Section was held on October 29.

NORMAN EADIE,
Honorary Secretary.

Gynaecology and Obstetrics.

During the year there have been five meetings, including two in association with the Branch, when papers, illustrated by cinema and lantern, and clinical histories, were presented. The section consists of forty members, with Dr. R. W. Chambers as President.

EDWARD R. WHITE,
Honorary Secretary.

Radiology.

The usual monthly meetings have been held, at which papers have been contributed by members, together with a series of conjoint meetings with other sections. These have included a dental evening, contributed by Professor Amies. The meetings have been well attended, and the interest in this section is possibly greater than ever before.

The question of the formation of an Association of Radiologists has been before the section and general approval has been given to the scheme.

DOUGLAS THOMAS,
Honorary Secretary.

Ophthalmology.

Dr. A. S. Anderson was elected president for the year. During the year there were seven meetings.

It is realized that it is almost impossible to keep abreast of the literature on all subjects; the section has approved of the occasional reading of papers by members on various subjects, in which the literature of the last ten years is reviewed.

At the termination of last year the standards for the certification of blindness were finally decided upon.

The president of the section delivered the first paper on intraocular foreign bodies, and Dr. Leonard Mitchell is delivering a paper shortly on retinal hemorrhages and lesions in systemic disease.

T. A'B. TRAVERS,
Honorary Secretary.

The annual report is submitted on behalf of the Council.

GERALD WEIGALL,
President.

J. P. MAJOR,
Honorary Secretary.

PRESENTATION OF GOLF TROPHIES.

The championship golf trophy, presented by the President, had been won by Dr. R. P. Booth. The trophy, which will be held for one year, was presented to Dr. Booth, together with a miniature to be retained by him.

The handicap trophy, presented by Dr. D. Roseby, had been won by Dr. L. W. Johnston. The trophy, which will be held for one year, was presented to Dr. Johnston, together with a miniature to be retained by him.

THE INCOMING PRESIDENT.

In the absence of the incoming President, Dr. R. M. Downes, the chair at this stage was taken by Dr. Walter Summons, the senior Vice-President.

PRESIDENT'S ADDRESS.

The retiring President, Dr. Gerald Weigall, then delivered his address (see page 37).

VOTES OF THANKS.

A vote of thanks to the retiring President was carried on the motion of Sir James Barrett, seconded by Dr. Cecil Tucker.

A vote of thanks to Dr. W. G. D. Upjohn for his services to the Branch was carried on the motion of Dr. R. H. Fetherston, seconded by Dr. C. H. Mollison.

SCIENTIFIC.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at Warragul on August 18, 1934.

Osteomyelitis.

DR. D. I. FITZPATRICK read a paper entitled: "Osteomyelitis" (see page 48).

DR. VICTOR HURLEY congratulated Dr. Fitzpatrick on his paper, which had covered most aspects of acute haematogenous osteomyelitis. Regarding diagnosis, there was a progressive diminution in the number of cases occurring, but it was not often missed if the possibility of its presence was thought of. The acuteness of the symptoms was not necessarily proportionate to the area of bone involved.

Infections of the upper end of the femur and of the ilium were most often overlooked. Lesions in the smaller bones and the most superficial larger bones were less often missed. Regarding treatment, Dr. Hurley said that in acute cases septicæmia was often present and much could not be expected from treatment. The only benefits to be hoped for from surgery were, first, relief of tension and, secondly, getting rid of inflammatory products. The importance of rest also was to be emphasized. Often free incision of soft tissues was all that was necessary, as inflammation and suppuration frequently extended chiefly up and down under the periosteum. If Starr's view were accepted, very wide opening of the medullary cavity was frequently unnecessary. At autopsy one was often struck by the ineffectiveness of widespread drainage of medullary cavities. It was best, therefore, to open the soft tissues and periosteum freely and then to open the bone by drilling only perhaps three to six drill holes at intervals of one centimetre along the diaphysis about the infected area. Frequent dressings and packing were usually not advisable. There would probably be some sequestrum formation, but this called for no special treatment until the symptoms, X ray findings *et cetera* indicated the presence of a loose sequestrum requiring removal.

DR. THOMAS KING expressed his appreciation of the paper and referred to a symposium on treatment published by the Royal Society of Medicine in 1931. The types of case varied very much and so the amount of treatment in early stages varied. One thing to be considered was the smell from the wound, and free ventilation with circulating air was indicated. There was a risk of packing tightly with vaseline, as some of this substance might be forced into the medulla, where it would remain. Sequestra should be removed in due course; the enclosing bone should not be scraped.

DR. G. J. LEY said that the subject of the paper was very important, especially that of early diagnosis. There were two valuable guides: one was the sudden onset with high fever, and the other a local swelling, usually near a joint. It was important to relieve tension at the earliest possible moment, and John B. Murphy had said that one should always have a chisel in one's pocket. The initial operation should allow of free exit of the pus. Later treatment depended on the presence of dead bone, and Dr. Ley thought dead bone should be got rid of early. Most cases of osteomyelitis were metastatic in character, if allowed to go on, and so culture should be made for vaccine from the original pus. Vaccine treatment was particularly effective in streptococcal infection. Dr. Ley quoted a case of a man whose foot had been crushed and sepsis resulted. A consultant advised amputation, but this was deferred and the foot remained very septic, and after a further consultation it was decided to amputate higher up. Amputation was performed below the knee and it was found that the intermuscular planes were purulent. Vaccine treatment was given and on the following day the temperature fell two or three degrees and on the next day to normal. From his experience in this and other cases Dr. Ley considered that in every case a vaccine should be prepared for use if required.

DR. HORACE PEEN said he had read recently several papers on osteomyelitis, but as he had not intended to speak or write on the subject, unfortunately he had not kept them, so he spoke purely from memory.

He took it that the generally accepted treatment adopted at present was that practised by Winnett Orr, namely, immediate free opening, light packing with gauze impregnated with sterile vaseline, no sutures, dressing, and then the whole limb encased in a plaster cast and left untouched for a period of several weeks. Orr's two fundamental principles were drainage and rest—immediate drainage, because inflammation set up hyperæmia, as the bone could not expand. Pressure rapidly destroyed the cells pressed on, so, if they were to be saved, the pressure must be relieved by adequate drainage, the wound must be left open and on no condition must sutures be used.

The reason Orr gave for rest were: The only treatment for inflammation was rest; hyperæmia produced decalcification; repair took place by the formation of granulation

tissue, which, if continually destroyed by fresh packing of gauze, would not allow repair to take place. Nobody could question the soundness of the principles, but they had a drawback in that the wound took a long time to heal, and from all accounts the smell reached to the heavens during the process and there was danger of secondary infection.

Dr. Pern raised the question as to whether they could obtain the same result in less time without the disagreeable smell and at the same time obey physiological laws. He would say yes, but then he was what Handley loved to designate "only an occasional surgeon". He did not intend to plead humility, because that would be pure affectation. He considered the ideal was to obtain as nearly as possible primary union instead of, as Orr practised, delayed union. To obtain that it was essential to relieve pressure by freely opening up the bone before destruction of cells or tissues had gone beyond the stage of possibility of repair. Till then a modified primary union was possible. After that stage exfoliation had to take place, and until then healing would not occur, or if it did occur it would break down again. As it was practically impossible to say in acute cases, especially the early ones, how far destruction had progressed, they could assist repair only by helping the cells to perform their normal function.

The first essential then was early diagnosis, and he would like to mention one physical sign which, as far as he could gather, was not mentioned in literature or, if it were mentioned, was not stressed, and that was swelling, in most positions easily recognized by simple observation; if both limbs were compared, the slightest alteration in contour could be detected.

As the inflammation was in the growing ends of bones and so near joints it was frequently difficult to tell the exact locality of the pain on pressure, especially in children who were in pain and who would cry on the slightest touch. If the joint were affected with arthritis, the contour would be altered, and if it were not altered, then that could not be the cause.

After a free opening had been made in the bone, drainage could be obtained by a strip of glove placed in the canal, then they could assist the cells to perform their normal function by replacing them as nearly as possible in their normal position instead of keeping them apart by some foreign substance.

The split and reflected periosteum should be loosely stitched together with number 1 ordinary catgut, the muscle and fascia by the same sized catgut, and then the skin in the usual manner, all sutures providing rather loose apposition. The wound was then dressed and the limb put up on a splint. The drain could be removed at the end of forty-eight hours or a fresh strip inserted for another two to three days and then finally removed. Dr. Pern could not see where there was any danger. If needed, the wound could be opened and kept open without the intervention of foreign substance. He had adopted that method in the case they had seen and also in a typical case of osteomyelitis in a boy who had been playing football three days previously and "sprained" his leg. He was a sick boy and complained of a lot of pain on the slightest movement of his leg. He had swelling on the lower third of the outer side of the leg, well blistered with fomentations. The contour of the ankle joint was normal, the swelling very tender on the slightest touch, so the diagnosis was obvious. His temperature was 102° F. Dr. Pern said he operated, making a fairly free incision, and opened up a periosteal abscess. With a chisel he then removed the anterior surface for about three inches, bevelled the edges smooth with punch forceps, put bismuth, iodoform and paraffin paste into the wound and put a strip of glove into the canal. He then stitched up the periosteum with number 1 catgut, then the muscle and fascia with the same size catgut, and the skin in the ordinary manner, all rather loosely. He dressed the wound and put the patient on a splint. He dressed the wound again and removed the drain in forty-eight hours, putting in another strip. The wound was dressed again at the end of a further forty-eight hours and the drain finally removed. The boy was discharged from hospital soon afterwards with the wound almost healed. It healed finally

a few days later. The temperature dropped to normal on the seventh day.

Dr. Pern said, in order to stress the difficulty of diagnosis, he would like to give the history of another type of case, especially as he had recently seen two young women who were now doomed to go through life crippled with ankylosed hips, in bad position, and who were denied the possibility of having children. He had also received a letter from a young woman who lived a long distance off, in the same condition and with the same sorry history. The first patient described by Dr. Pern was a boy aged six years, who lived in one of the capital cities and who had been kicked on the hip by another boy. He limped after being kicked and the next day the leg was very tender, although he went to school. He had a restless night and the following day complained of a lot of pain in his hip and was ill. He was seen by a well-known consultant, who thought he had an acute infection of the hip joint. The boy gradually improved during the next few days, but had a relapse, and his temperature rose again to 102° F., and a consultation took place with a view to diagnosing infantile paralysis, but this was not upheld. He improved again and after three weeks' rest in bed was allowed up, but he was miserable and only crawled about. The father's work took him to Leongatha, and Dr. Pern thought it was on the night they arrived that the boy had a very bad night and complained of a great deal of pain. Dr. Pern saw him in the morning, when he was a very sick child who screamed when touched, and he had a temperature of 102° F. He could make no diagnosis, so the boy was taken into his hospital and put on a Thomas splint, which relieved his pain. The next day he was better, and Dr. Pern made a careful examination. He could detect nothing; he had no arthritis and nothing to make out over bone. He was admitted to hospital on December 21 and his temperature gradually fell to 99.4° F. on the evening of December 23 and remained so on December 24. After a careful examination each day, upon which nothing could be detected, the temperature rose to 101° F. on December 25, and the next day, for the first time, he could detect some swelling and tenderness on the outer side, below the great trochanter. He told the father he would see how the boy was in the evening, and as his temperature rose to 102° F. Dr. Pern said he decided to operate next morning. He found a lot of serum in the soft parts and opened up the bone with three gouge holes and obtained free venous oozing. He adopted the same procedure as for the previous cases and drained for some days. The boy was discharged from hospital with the wound quite healed on January 20, since when he had been splendid.

Dr. Pern said the points he wished to bring out were the extreme difficulty of diagnosis, the length of time before localizing signs might develop, and the absolute necessity for mechanical rest for patients who showed other symptoms of inflammation of bone and who should not be treated as malingerers and told to get about and pull themselves together.

Dr. C. M. LEX said that hyperæmia produced decalcification, and therefore removal of the sequestrum would tend to prevent healing of the bone.

Dr. G. WEIGALL, the President, thanked Dr. Fitzpatrick for his paper.

In reply, Dr. Fitzpatrick said that with diffidence he differed from Dr. Hurley. He himself was in favour of free opening of bone and of early removal of sequestra. It gave a chance of limiting the number of operations. He could not agree with Dr. Pern in his view that closure of the wound as far as possible was good treatment.

A MEETING OF THE TASMANIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Tasmanian Museum on December 11, 1934. Dr. W. L. CROWTHER, the President, in the chair.

The Late Eric Jeffrey.

A motion was moved from the chair, expressing deep regret at the death of Dr. Eric Jeffrey and the loss sustained by the Association by his passing. It was resolved that a letter of sympathy be sent to Mrs. Jeffrey.

Artificial Pneumothorax Treatment of Pulmonary Tuberculosis.

DR. T. GODDARD read a paper on artificial pneumothorax treatment of pulmonary tuberculosis. He showed by a series of X ray films the progress of one case complicated by effusion and adhesions. He stressed the difficulties encountered in such cases and the need for close watching by means of X ray examinations. He concluded his paper by stating his experiences at the Tasmanian Sanatorium with such treatment and with gold injections, and said that some patients had been discharged as cured. The value of gold in tuberculous involvement of the larynx, in his experience, had been very marked.

DR. E. W. J. IRELAND congratulated Dr. Goddard on his successful work at the Sanatorium and on the matter he had presented for the evening's discussion. In his experiences the greatest difficulty had been in regard to adhesions preventing obliteration of the cavity. These patients, he thought, required constant supervision for two to three years.

DR. A. W. SHUGG stressed the value of artificial pneumothorax as an essential in the treatment of tuberculosis of the lungs. The selection of suitable cases, however, was of great importance and presented some difficulties. He sounded a note of caution as to the use of pressure in breaking down adhesions. Collapse might follow sudden displacement of the heart, or the condition might become permanent. In regard to gold treatment, he found it to be unequal in its action, some patients responding far better than others. Small doses were often indicated rather than large doses. He had found the treatment of value notably in a case of glandular enlargement of the neck and in certain eye conditions in patients with a tuberculous diathesis.

DR. J. B. HAMILTON had found "Solgarinol B" of great value in a series of eye conditions in which improvement had not taken place with the usual treatment, speedy recovery having followed its use.

DR. W. L. CROWTHER, in thanking Dr. Goddard for his valuable paper and for having initiated an interesting discussion, stated that he had been greatly impressed by the result of the use of gold injections in abscess of the lung.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held on August 23, 1934, at the Lewisham Hospital. The meeting took the form of a series of clinical demonstrations by members of the honorary staff.

Acute Lead Poisoning.

DR. J. KENNEDY showed a man, aged twenty-four years, who had been employed for a few weeks only in the manufacture of motor car batteries. The patient gave a history of a sudden attack of abdominal pain followed by vomiting and constipation; he had no urinary symptoms. On examination his temperature and pulse rate were normal. Tenderness was found in the abdomen; this was most pronounced in the right iliac fossa; it was also present in the centre of the abdomen and later in the epigastrium. An absence of muscular rigidity was noted. Diagnoses of early acute appendicitis, of intestinal obstruction, of lead poisoning, and of malingering for the sake of compensation were considered in turn.

Two weeks later the patient had a second attack with more severe symptoms. Iodide of potash, 0.6 gramme (ten grains), and sulphate of magnesia, 1.2 grammes (20 grains), were administered three times a day with resulting increased severity of symptoms for twenty-four hours. This helped to confirm the diagnosis of lead poisoning. A hypodermic injection of morphine, 0.01 gramme (one-sixth of a grain), was administered.

A full blood examination was made with the following result:

Erythrocytes, per cubic millimetre ..	4,600,000
Hæmoglobin value	74%
Leucocytes, per cubic millimetre	12,600

The hæmoglobin value, Dr. Kennedy explained, was equivalent to 11.6 grammes of oxyhæmoglobin in 100 cubic centimetres of blood. Basophilia was present, 7,000 cells per million red cells with polychromasia being found.

On examination of the urine, 0.16 milligramme of lead per litre was found. A faint trace of albuminuria was present, but no casts were found.

Thyreotoxicosis.

DR. JOHN H. HALLIDAY showed a female patient, unmarried, aged twenty-five years, who was seen in the out-patient department on May 20, 1934. She gave a history of increasing nervousness and irritability during the last eighteen months. She had lost over a stone in weight and had noticed a swelling in her neck for twelve months. Recently sweating with palpitation and breathlessness had occurred on slight exertion.

Physical examination revealed a diffuse generalized soft enlargement of the thyroid gland, with a systolic bruit audible on auscultation over the gland.

The patient was very apprehensive, with marked tachycardia and pulsation of the vessels in the neck. There was a slight widening of the palpebral fissure with fine tremor of the fingers and moist skin. One infected tooth was present. The basal metabolic rate was +36%. Glycosuria was present on one occasion while the patient was in hospital.

The patient was admitted to hospital on June 2, 1934, and given a full diet, complete rest and a mixture containing quinine hydrobromide as well as phenobarbital at night. X ray treatment was commenced at the Royal Prince Alfred Hospital on June 28, the patient being conveyed there by ambulance. Sixteen applications were given at two to three day intervals until August 1.

Dr. Halliday explained that clinical improvement commenced to manifest itself about the third week of July, and this had continued. The thyroid gland was now only slightly enlarged, the patient's weight was half a stone greater than on her admission to hospital, and she was very much quieter and calmer. There was still some tachycardia, which was readily accentuated by any emotional stress. Her basal metabolic rate on August 2, 1934, was +4%, with a pulse rate of 80 per minute throughout the estimation.

The chart of the patient's pulse rate and weight during her period in hospital was shown.

Malignant Disease and Radium Treatment.

DR. H. M. MORAN showed a case of carcinoma of the right tonsil in a man aged seventy-five years, which had been successfully treated by implantation of radium and subsequent X ray therapy. He pointed out the danger of taking biopsy in such cases and the difficulties in treatment. Important factors for success in using radium were the even distribution of an efficient dose over the whole area, the use of multiple foyers and of radium needles of low linear intensity. It was most important to avoid sloughing because of the danger of secondary hemorrhage.

He also showed a patient, referred by Dr. Wesley, who had had a large squamous carcinoma of the forearm, the size of a mandarin, and two basal-celled epitheliomata of the left orbital region, one of which had invaded the orbital cavity and largely destroyed the eye. The first lesion had been treated by radium puncture and the orbital condition by radium on wax moulds at a distance of 1.5 centimetres. All the lesions had been successfully treated.

A third case was a squamous epithelioma of the tongue, which was situated posterior to the circumvallate papillae. The epitheliomata in this position were remarkably sensitive, but their inaccessibility and the rapidity with which the regional glands were involved in many cases led to failure in treatment. This case was interesting inasmuch

as the regional glands were apparently not affected, although the primary lesion was somewhat extensive, and Dr. Tebbutt had found it to be stratified squamous epithelioma. The gland involvement was usually early and occurred in 90% of such cases. Dr. Moran was of the opinion that the excision of unaffected lymphatic glands was a surgical crime, but obviously it was necessary to watch most carefully such patients and to practise excision at the first indication of glandular involvement. The enlargement of lymphatic glands in tongue cancer was nearly always of cancerous nature and constituted a failure of the defence mechanism. With squamous epithelioma of the lip the position was quite different. Excepting the rare malignant growths of Broder's Class IV, which rapidly and extensively metastasized, most epitheliomata of the lip affected the glands late and in not a very high proportion of cases. The energetic surgical treatment, therefore, which one adopted in the presence of lingual cancer should not be recommended as a routine procedure for lip cancer. The lymphatic tissue must be regarded as having, up to a certain point, a valuable protective power against the spread of malignant disease.

The fourth case shown was that of a patient who, nine and a half years ago, had had a radical operation for scirrhus carcinoma of the breast (Steinthal, Stage III). The radical operation was performed and subsequently Dr. Molesworth gave post-operative deep X radiation with three cross-firing doses by the old massive dose technique. This was before the technique of the protracted and fractional treatment had come into vogue. In some of these cases pulmonary fibrosis used to result, but this patient had remained cancer-free and well to the present day. Dr. Moran pointed out that the correct and expert use of X radiation in conjunction with surgery gave nearly double the number of five-year cures as from surgery alone.

Finally, Dr. Moran showed the slide of a growth from the coccyx which had recurred locally three years after removal and in which a large inguinal metastasis was present; the original growth was reported as a teratoma greatly resembling an ependymoma. The recurrence showed a peculiar papillary structure, and Dr. Tebbutt suggested the most likely hypothesis was that the original growth had its origin from the neurenteric canal.

Polycystic Disease of the Kidney.

Dr. RICHARD HARRIS demonstrated some intravenous urograms and retrograde pyelograms typical of polycystic disease of the kidneys.

He emphasized the inevitable bilateral nature of the condition and condemned the all too common indiscriminate removal of a polycystic kidney when accidentally found. The urological department of the Lewisham Hospital had encountered twelve examples of this procedure within the past twenty years.

Dr. Harris described the procedure adopted during this period. The operation advocated by Rovsing had been carried out by Dr. S. Harry Harris, and more lately by himself, in almost one hundred cases, and in the great majority the second kidney had been operated upon six to eight weeks after the primary operation. The essential feature of the operation was the extraperitoneal delivery of the kidney and the puncture of all accessible cysts. This operation had proved one of no great technical difficulty, and it could be repeated with equal facility if and when recurring cystic enlargement warranted. Only two patients, however, had required reoperation in this period, one after fourteen years (whose pyelogram was demonstrated) and the other after twelve years.

The results of the operation had been extremely good, whether undertaken for pain, sepsis, hæmaturia, or high blood pressure of an accompanying nephritis. There had been no operative mortality.

In conclusion Dr. Richard Harris stressed the essential operability of polycystic disease, provided always that the renal function was good enough to warrant operation.

Renal Sympathetico-Tonus.

Dr. Richard Harris showed, on behalf of his brother, Dr. S. Harry Harris, pre-operative and post-operative

radiograms from two patients suffering from renal sympathetico-tonus, demonstrating the improvement brought about by renal sympathectomy. He said that renal sympathetico-tonus was a title affixed in the urological department of the Lewisham Hospital to a condition of neuro-muscular dysfunction, resulting in urinary stasis in the renal pelvis and calyces, in which the faulty drainage was due presumably to over-activity of the sympathetic nerve supply to the kidney. The outstanding diagnostic signs of renal sympathetico-tonus were: (i) renal pain confined to one side only; (ii) the recurrence of pain after its temporary relief by eserine; (iii) urinary stasis involving the pelvis and calyces of the affected kidney, readily demonstrated by delayed emptying time in the pyelogram; and (iv) the absence of any demonstrable cause of organic obstruction.

Dr. S. Harry Harris had described three stages of the disease, namely: (i) The stage of systole, in which urography demonstrated the predominance of contraction of the pelvis and calyces. (ii) The stage of diastole, in which urography showed relaxation of the renal pelvis and calyces to be the predominating condition, so that the pelvis and calyces would appear larger than those of the opposite kidney, even though little or no actual dilatation had occurred. (iii) The stage of dilatation, or retention with overflow, in which any grade of hydronephrosis might be present.

The operation of renal sympathectomy should be reserved for cases of this type and, when properly carried out, would yield uniformly good results in stages 1 and 2, while in stage 3 there might be required in addition some type of plastic operation for hydronephrosis.

Cystic Hygroma.

Dr. R. FLYNN showed a baby who was brought for consultation with a huge cystic hygroma involving the neck, upper part of the arm, upper part of the forearm, a large extension over the scapular region of the back, and the lateral pectoral region. The child was first seen at the age of ten months. The child was in very poor general condition, and it seemed that the weight of the arm was almost as great as that of the rest of the child. The growth seemed too big to justify the use of distance radium treatment, so it was decided to use a combination of surgery and diathermy. By multiple divided operations the bulk of the tumour had been removed, and at another operation the task would be completed. Dr. Flynn said that this case showed the importance of not attempting too much at one sitting. The child was now thriving, had the use of its arm, which was useless before, on account of its great weight and because movement was limited by the bulk of the tumour.

Epithelioma of the Lip.

Dr. Flynn also showed a man, sixty-eight years of age, who presented himself on November 26, 1932, with one of the most extensive epitheliomata of the lip that Dr. Flynn had ever seen. Under cervical block anaesthesia radical removal of the glands of the neck was performed. Twenty-one two-milligramme needles were inserted for seven days. A total dose of 7,006 milligramme-hours was given, roughly 50 millicuries destroyed. There was now no evidence of carcinoma and no sign of recurrence—almost two years later.

Fracture and Dislocation of the Lower Jaw.

Dr. Flynn also showed a man who sustained a bilateral fracture of the condylar processes of the mandible with bilateral dislocation of the condyles. He also had a fracture at the *symphysis menti*. Under bilateral Gasserian ganglion block anaesthesia an attempt was made to reduce the dislocation. Fortunately the right condyle slipped into position and Dr. Flynn was able to secure correct occlusion of the patient's teeth. The condyle of the left side could not be reduced and, as it was an obstacle to movement, it was removed on a subsequent occasion under Gasserian ganglion block anaesthesia. The teeth were maintained in correct occlusion by interlocking upper and lower dental plates, which were cemented to the teeth and left on for

six weeks. They were removed recently and the patient had full power over movements of his jaw, and the occlusion of his teeth was improving rapidly.

Osteitis Fibrosa Cystica.

Dr. Flynn's next patient was a woman, aged forty-seven years, who came for consultation on account of a swelling in the jaw, which had first been noticed twenty-seven years ago. The swelling had been gradually increasing in size in that interval, but recently had undergone a sudden acceleration in growth. The mass caused no pain, but its size made it impossible for the patient to have her false teeth in her mouth. An X ray examination was made and the condition was diagnosed as *osteitis fibrosa cystica*. Under intranasal intratracheal anaesthesia with a McGill tube the left external carotid artery was tied and the entire left side of the mandible from the *symphysis menti* to the condylar process was removed.

Dr. Flynn said that as these tumours were only locally malignant, it was deemed prudent to attempt some means of hiding the resultant deformity. Accordingly, at the time of operation a silver jaw was inserted and allowed to remain in for two months. The patient at present, except for the scar of operation, shows no signs of deformity.

Malignant Disease of the Breast.

Dr. Flynn's last patient was a married woman, aged forty-five years, who was first seen on July 29, 1931, complaining that two and a half weeks previously she had noticed a swelling in the left breast. She complained of no pain and had only noticed the swelling by accident. Her general health was excellent. On examination she had a nodule about 3.75 centimetres (one and a half inches) in diameter, which was fixed in the breast tissue, but not to the skin or pectoral fascia, and there was no retraction of the nipple and no discharge. X ray examination of the chest revealed no abnormality. On August 6, 1931, under ether anaesthesia induced by the open method, nine three-milligramme, fourteen two-milligramme, and two one-milligramme needles were inserted, and these were left in for ten days. The total dose was 13,680 milligramme-hours. She had a well marked radium reaction and at present there was no sign of further trouble. Skiagrams of the chest, thoracic and lumbar spaces showed no evidence of malignant disease on December 12, 1932.

Recently, on account of recurrent hemorrhages, which were due to a *fibrosis uteri*, the patient underwent the operation of total hysterectomy. The opportunity of palpating the liver was taken; no evidence of metastasis was found. She had now gone four years without any sign of recurrence or metastasis.

Mixed Adenoma of the Pituitary.

DR. GILBERT PHILLIPS showed a patient from whom he had attempted to remove a mixed adenoma of the pituitary gland. This case was reported in full in a previous issue.

(To be continued.)

Obituary.

OTTO FOLIN.

We are indebted to Dr. H. S. Halcro Wardlaw for the following appreciation of the late Otto Folin.

The death of Otto Folin on October 25, 1934, marks the close of an era in the history of physiological chemistry or, as we now prefer to call it, biochemistry.

Born in Asheda, Sweden, in 1867, he went to America in his early teens. He graduated in science in the University of Minnesota in 1892 and took his doctorate of philosophy at Chicago in 1895. Later in life, when his reputation was well established, many academic honours were conferred by other countries. Among these was the Honorary M.D. of Lund. He occupied the chair of biological chemistry at Harvard Medical School from 1907 to the time of his death.

Folin's main contributions to biochemistry were in urine and blood analysis. He was the first to carry out complete systematic analyses of the twenty-four hours' urine. Besides developing quantitative methods for the estimation of many of the urinary constituents, he showed the effect of protein starvation on them, and in 1905 established the fundamental conception of endogenous and exogenous metabolism, and especially the importance of the creatine output as a measure of the metabolism of muscle.

From urine Folin turned his attention to the then much more difficult problem of the chemistry of the blood. Owing to the small concentration of many of the important constituents of blood, only spasmodic efforts had been made by chemists to determine them, and these efforts were largely restricted to determinations of blood glucose. After considerable preliminary work Folin, in collaboration with Wu, published in 1919 their now universally known and widely used system of blood analysis. In the meantime improvements have been made from time to time in this system and many studies of the composition of the blood have been made by its means in his own and other laboratories. The system has supplied the standard routine methods for hundreds of hospital laboratories, in the United States mainly, but also in many other countries.

As late as 1929 Folin introduced a simple method of analysing blood without laking the corpuscles. He was still engaged in working out the results of this type of analysis at the time of his death. He had in the interval solved many problems with regard to the distribution of substances between plasma and corpuscles. In particular he settled at a stroke the controversial question as to the actual amount of uric acid in the blood and showed that the previous confusion had been the result of the presence of disintegration products of the red cells.

Folin's relations with his staff were of the happiest. His somewhat grim appearance, the result of facial paralysis, was soon forgotten by the newcomer in his laboratory. Those who have had the privilege of being guests in his laboratory carry away an affectionate remembrance of his kindly humour, not always appreciated by those who were apt to take themselves a little seriously. Folin's natural simplicity and his habit of direct approach to the questions which he investigated made him impatient of any suggestion of pretentiousness in manner of attack or presentation of scientific problems.

With Folin medical science has lost one of its ablest servants.

ERIC JEFFREY.

SOME weeks ago we recorded in these pages the death of Dr. Eric Jeffrey. He was a man to whom the public owed much, to whom the medical profession, particularly in Tasmania, owed more, and to whom his friends owed a debt incalculable.

Eric Jeffrey was born in New Town, Tasmania, forty-five years ago. His early education was undertaken at Leslie House School, now known as Cleves College. He became a student in the Faculty of Arts at the University of Tasmania and took, first, his Bachelor's and then his Master's degree. As will be seen from the tribute written by Professor R. L. Dunbabin, the classics became part of his life. In later years, when illness overtook him and when he took refuge in intellectual pursuits, he devoted a great deal of time to Greek and Latin authors. He undertook the study of the science subjects for his first year in medicine at the University of Tasmania, and later went to the medical school at the University of Sydney. He was a successful student and after graduation as Bachelor of Medicine and Master of Surgery became a resident medical officer at Sydney Hospital. He carried out his duties carefully and took a keen pride in verifying his diagnoses in operating theatre or *post mortem* room. His boyish sense of humour, with his love for accuracy, made it a joy to work with him. Invariably the funny side of an incident would strike him, and when he could no longer practise medicine he would tell tales of wordy bedside arguments

with a relish that made the years seem as days. After leaving Sydney Hospital he went into practice at Chatswood and was soon appointed to the staff of the Royal North Shore Hospital of Sydney on the surgical side. Those who know of his work say that he would have made a successful surgeon had not illness overtaken him. He had not been in practice very long when the first evidences of rheumatoid arthritis were manifest. War broke out and most of his friends were volunteering for service. He felt very keenly his inability to offer for service overseas, for he knew that he was threatened with rheumatism. He was accepted for home service, however, and did much useful work. The photograph of him published herewith was taken at this time. When his friends came back from the War they found him confined to bed, suffering from progressive joint involvement. For fifteen years he remained an invalid; he suffered much, for exacerbations of his joint condition often occurred. He never complained. He read and studied books on medicine and general literature as well as the classics. He knew his Shakespeare as few men do. For months ahead he would plan his reading, dividing his days into periods, and sometimes his nights. He read his medical journals and tried to keep himself abreast of modern advances. He was interested particularly in physiology, and acted as examiner in that subject to the University of Tasmania. He delved into modern physics, would work at physical problems and could discuss them in a way surprising to experts in the subject. In a word, he rose above his bodily disability and lived in a world of the intellect. Not that he lost interest in the everyday life of his friends. On the contrary, his lively sense of humour made them feel that he could almost share their pleasures.

THE MEDICAL JOURNAL OF AUSTRALIA owes much to Eric Jeffrey. For many years he undertook the work of reviewing books. He had a preference for books with an historical or general interest, and his criticisms invariably reflected his logical mind and gave evidence of insight and understanding. Latterly he acted as the Editor's representative in Tasmania. The members of the Tasmanian Branch made him their referee in many matters; he gave advice gladly and helped many members in drafting and writing their papers. At the request of the Branch Council he prepared many broadcast talks on matters of medical interest, and he was most helpful in the Tasmanian Anti-Cancer Campaign. The request from the Queensland Branch that he should write last year's Jackson Lecture was a source of great satisfaction to him and gave pleasure to readers of this journal. The personal tributes that are published herewith show how he was regarded by his friends. He had friends in every part of the Commonwealth, for he was sought from far and near. The announcement that an Eric Jeffrey Prize is to be founded in the University of Tasmania¹ will be welcomed by all who knew him. This short account of his activities would be incomplete without reference to his wife, who, with understanding, devotion and courage ministered to his needs and made it possible for him to serve his fellows as he did. The sympathy of the medical profession for his wife, so beautifully offered

by Dr. D. H. E. Lines in an oration at the graveside, will be echoed from all parts of Australia.

Dr. W. L. Crowther writes:

Although since his return to Tasmania in 1919 Eric Jeffrey had been unable to be moved from his bed, he had taken a very important part in the medical affairs of his State.

It was the custom of a number of us to find our way to his bedside to discuss with him clinical work and the affairs of our medical world.

His detachment from practice, his logical mind and his wide reading enabled him to give most valuable advice and help.

His courage did not allow him to refuse to undertake anything that was required of him, and within the last twelve months he not only prepared, but personally transmitted, a series of broadcast talks on "The Functions of the Human Body". That they were of widespread interest and greatly appreciated by the public was shown by a number of letters of correspondents to *The Mercury*.

His pen, too, was responsible for the articles used in the Tasmanian Press for the Anti-Cancer Campaign of this year.

I shall not touch upon his work for THE MEDICAL JOURNAL OF AUSTRALIA; the Editor will no doubt indicate how well that was done.

His courage had become a tradition in our small community. Recurring attacks of iritis even did not stop his work. With the aid of his devoted wife, with one or both eyes bandaged, he forced himself to correct examination papers or to complete such articles as were due, or to review the books sent to him for that purpose.

His life of constant unease, so splendidly borne, gave him a unique place in the hearts of us who remain. In every way he was an inspiration, and in spite of all his suffering it may be said that it was a "Happy Warrior" who has passed on before us.

Professor R. L. Dunbabin, Professor of Latin and Greek in the University of Tasmania, writes:

Eric Jeffrey was one of a group of three who, between 1907 and 1910, took Arts in the University of Tasmania before beginning their medical course. None of the three had touched any science after fifteen. At the university they specialized in Latin and Greek. It was not till they had taken their B.A. that they turned their attention to physics and chemistry and biology, and yet they had no difficulty in passing in these three subjects in one year.

I remember that Jeffrey told me that, compared with Latin and Greek, biology was child's play. The other two went to Edinburgh; one of them is now Professor of Bacteriology in Liverpool, the other Assistant Professor of Physiology in McGill University in Canada. So much for the classics as a preliminary to medicine. Whether these two read any Latin or Greek after they took their degrees I cannot say, but Jeffrey did. While he was doing his M.B. science subjects here in 1910 he took the honours examination in classics. This, by the way, has been taken by only two students since, one of whom is now a dentist, the other a medical practitioner.

It is exceptional for a man to keep up his acquaintance with the subjects which he read for his degree, unless they



¹ See a letter by Dr. D. H. E. Lines in the correspondence column.

are needed in his profession; but Jeffrey never lost his interests in the classics and kept up his reading to the last. He was blessed with a very remarkable memory. I sent him last year a paper that I had written on Horace's alleged villa at Tivoli. He noticed that an explanation of a passage in Horace was quite different from that which I had given the class in 1908, and remembered what I had said then.

Only this year he read through the 360 pages of Celsus on medicine, a book which, interesting and instructive as it is, very few classical scholars ever read. This he read for his lecture on Roman medicine; that lecture contained ample proof of the extent of his reading and the tenacity of his memory. I found more than once that he used passages in Martial that I had forgotten, and on looking them up I invariably found that his application of them was correct. Had it been his lot to devote his life to classical scholarship, he might have gone far, for he had not only a disinterested love of learning and a good memory, but also a clear, logical mind, well adapted to initiate or to follow trains of reasoning in any subject matter.

Professor A. E. Taylor, Professor of English in the University of Tasmania, writes:

Though neither a professional colleague nor lifelong friend of Eric Jeffrey, may I be permitted to pay a tribute perhaps even more significant than that of deep friendship or of respect for his scientific brilliance; and in this tribute I speak for many.

Like many others, I paid my first visit to his bedside, hoping to provide some distraction in the life of a helpless, bedridden invalid. And, like those others, I found myself the recipient, not the giver. What I could give to him was very little; what he gave to me was a world of new interests and a steadily increasing stimulus to my studies.

Paradoxical though it may seem, to leave the busy world for Eric Jeffrey's bedroom was like escaping from confinement in a prison. In place of the bias and prejudice and lop-sided views of a world of specialists, each embedded in his own particular groove, we communed with a mind of all-embracing interests, critical, analytical, unprejudiced, frank and, above all, bracing. To discuss a problem with him meant facing it with absolute frankness; all pet fancies, all cherished theories had to be swept aside if they could not stand the most searching and rational investigation.

Therefore his bedroom became a club, like the most famous of eighteenth century coffee houses, in which good fellowship and intellectual battles were harmoniously linked. And so, even to us who had not the privilege of long friendship, his loss is yet irreparable. It is like the coming of darkness; as month follows month and year follows year, we shall only feel more deeply the loss of that stream of inspiration which can never flow again. For Eric Jeffrey was more than a valued friend, more than a brilliant scholar, he was an institution; and to sit at his bedside was a liberal education.

A medical practitioner who was a friend of Eric Jeffrey for more than twenty years, and who wishes to remain anonymous, has written the following lines:

We greet you as you lie, unconquered, proud,
In peaceful slumber at the call of death,
And drape around you as a mystic shroud
The love and hope to which your life gave breath.
You came among us as a spirit clad
With radiant youth, with zest to love and live,
To toil, to thrill with laughter free and glad,
And treasures from your richest store to give.
Despite ill fate that sought with crushing blow
To quench the fire, to check your high emprise,
You did not falter. Rather did you grow
In courage and in strength. You bid us rise
Above the trammelled flesh and so to find
Our solace in the kingdom of the mind.

SYDNEY SARGENT MERRIFIELD.

WE regret to announce the death of Dr. Sydney Sargent Merrifield, which occurred on January 6, 1935, at Cheltenham, New South Wales.

Post-Graduate Work.

POST-GRADUATE COURSES IN SYDNEY.

THE New South Wales Permanent Post-Graduate Committee has made the following preliminary announcements for 1935.

General Revision Course.

The general revision course for 1935 will be held in Sydney from Monday, May 27, to Friday, June 7. Instruction will be given at the following hospitals: Royal Prince Alfred Hospital, Sydney Hospital, Saint Vincent's Hospital, Royal Alexandra Hospital for Children, Royal Hospital for Women, Crown Street Women's Hospital, Lewisham Hospital, Royal North Shore Hospital of Sydney, Tresillian Mothercraft Training School, and The Prince Henry Hospital.

Railway concession tickets are available for those attending the course.

The course is open to all medical practitioners, the fee for which is £3 3s. A full programme will be published at a later date.

Those wishing to attend should notify the Honorary Secretary, New South Wales Permanent Post-Graduate Committee, 225, Macquarie Street, Sydney.

Lectures by Dr. Charles Kellaway.

A series of four lectures by Dr. Charles Kellaway, on "Applied Physiology", will be delivered during the period of the May course during the evenings. A full announcement of these lectures will be made at a later date.

Course in Ophthalmology.

A course in practical ophthalmology, lasting fourteen days, limited to fifteen medical practitioners, will be held in November, 1935. Those wishing to attend this course should immediately register their names, as the list will be closed when the full number of applications has been received.

Further particulars of this course will be made available at a later date.

Correspondence.

THE ERIC JEFFREY PRIZE.

SIR: At a meeting of the friends of the late Dr. Eric Jeffrey, held at the Masonic Hall, Hobart, on 11th instant, it was decided to try to raise sufficient money among his personal friends to establish an annual prize at the University of Tasmania, to be called "The Eric Jeffrey Prize", for the purpose of perpetuating his memory. At a subsequent meeting of the committee elected to carry out this object it was suggested that some of his friends and admirers and fellow students might like to be associated with the fund, and I was requested, as chairman of the committee, to write to the journal to that effect. Contributions may be sent to the honorary treasurer of the fund (Mr. C. R. F. Olney, 43, Proctor's Road, Hobart) or myself. May I suggest that contributions might also be received by yourself as Editor of our journal?

Yours, etc.,

D. H. E. LINES.

Hobart,
December 12, 1934.

[Contributions sent to the Editor will be acknowledged in the columns of the journal.—EDITOR.]

DONORS FOR BLOOD TRANSFUSION.

SIR: In your issue of November 24 last, in a note on blood transfusion units, I said that blood groups may change. They do not, but there is a danger in re transfusion.

The accepted position is well put in a personal communication from Dr. Marjory Little, December 7, 1934:

I think it is universally accepted that a blood group, once established, does not change.

There is no question as to the desirability of direct typing between donor and recipient as a check on the result of indirect typing, but direct typing becomes essential when: (i) a recipient has already received a transfusion, and (ii) in all cases of profound anæmia. In (i) the blood group does not change, but possibly a subgroup in the recipient is unmasked through the agency of an agglutinin contained in the donor's corpuscles.

I think you are working along the soundest lines when you use indirect typing as a convenience in the selection of possible donors, and direct typing before the donor selected for the particular recipient is actually used.

Yours, etc.,

BROOKE MOORE.

142, William Street,
Bathurst,
December 30, 1934.

ALLERGY IN OTO-RHINO-LARYNGOLOGICAL PRACTICE.

SIR: I have read with great interest Dr. Keith Watkins's article on "Allergy in Oto-Rhino-Laryngological Practice". If his findings are substantiated by others, it will mark one of the greatest advances that have been made in this direction. Not only will it be of advantage for the direct symptoms of sinusitis, but for all ills of which sinusitis is the cause in other organs. It has long been my experience to find sinusitis associated with allergic nasal conditions, and many have lost their allergic phenomena when their infections were cleared up; but that the allergic condition was the primary cause of the infection is of great interest. We are only just beginning to understand the part that sensitization plays in disease, because it probably is the determining factor which causes the organism to be held up in a certain tissue and produce local damage there, when those organisms are circulating in the blood stream. We have now arrived at the time when desensitization against foreign proteins is an accomplished thing. Our next and perhaps more interesting development will be the solution of the cause of sensitization, and I do not think the time is very far off when we will be able to raise the resistance of tissues against becoming sensitized and so eliminate allergic reactions.

Yours, etc.,

SYDNEY PERN.

12, Collins Street,
Melbourne,
January 4, 1935.

HOSPITAL PRACTICE IN NEW SOUTH WALES.

SIR: It is time to draw attention to a glaring absurdity in the *Hospitals Act*.

The fees for a patient in a public ward range from nothing to £2 9s. per week, according to means; and no charge can be made by the doctor. The intermediate patient pays £3 3s. per week to the hospital and the doctor can charge half the fee that a private patient would pay: say up to £2 2s. per week. So the total fees (hospital and professional) that an intermediate patient can be called upon to pay are £5 5s. per week.

See the absurdity: the maximum fees of a public ward patient are £2 9s. per week; of an intermediate patient, £5 5s. per week. Yet the people who could afford fees somewhere between these limits must be a very large proportion of the population, probably not far short of half.

The gap is obviously caused by the quaint idea of the framers of the Act that a person who could afford £3 3s. per week for a bed in a hospital could also afford £2 2s. per week for his doctor, while one who could pay £2 9s. per week for his bed could not be expected to pay anything to his doctor.

It is time that medical practitioners demanded the right to charge fair fees to all patients able to pay. I would suggest as a reasonable fee for a public ward patient half of whatever the hospital might charge. Thus the patient paying £2 9s. per week to the hospital would be charged £1 4s. 6d. by his doctor, bringing the total fees up to £3 13s. 6d.

An idea that will be shuddered at as altogether too revolutionary for a conservative administration is that in a hospital having public, intermediate, and private wards, the beds should be allotted according to the medical necessity, not according to the bank balance of the patient.

Yours, etc.,

E. P. DARK.

Katoomba,
New South Wales,
January 4, 1935.

DRUG ADVERTISEMENTS.

SIR: In today's journal you print a timely letter from Dr. Inglis Robertson on the menace of drug advertisements. *The British Medical Journal* for November 24, 1934, reviews "Hospital Practice for Interns", "a pocket volume, published by the American Medical Association, which provides a concise and carefully compiled materia medica" *et cetera*. The price is not stated. The purpose of the volume is to fortify the physician against the advertisements for proprietary remedies and against "the lure of the fixed formula" and "the facile flow of pseudoscience that emanates from the lips of the detail man". That such a publication is badly needed is shown by the American Medical Association's activity in its compilation. Could not our Association or the Australasian Medical Publishing Company arrange for the book to be made available in Australia?

Yours, etc.,

R. N. BEAZLEY.

Lane Cove Road,
Wahroonga,
New South Wales,
January 5, 1935.

MORTALITY FROM APPENDICECTOMY.

SIR: I have read the comments that have been published in *THE MEDICAL JOURNAL OF AUSTRALIA* in recent months on the above subject, and desire to add a few remarks.

It has become very clear to us all that the appendix is now the "martyr of surgery". It would ill become me, as one of the senior surgeons, to accuse my younger brethren of using this organ for combating the *res angusta domi*; but I think it is my duty to draw attention to the fact that there appears to be no inconsiderable number of junior operators—I cannot call them surgeons—who consider that when they operate on a case of acute appendicitis it is their bounden duty to remove the appendix at all cost.

I do not think there are many patients killed in the everyday removal of the harmless appendix; but I feel very strongly on the point that there is often an indecent haste in rushing a patient to hospital in the dead of night to remove an appendix, as though the medical attendant were fearful lest the patient should be well by morning, when in reality the patient is in the fourth or fifth critical day of acute appendicitis.

This is the chief cause of mortality in appendicectomy, for the simple reason that the young and inexperienced surgeon refuses to distinguish between the acute appendix of forty-eight hours' standing and the acute appendix that has entered the fatal-to-operate period of the third, fourth and fifth days.

When the amateur surgeons learn the lesson that Murphy, Ochsner, Howard Kelly and others have tried in vain to teach them, then and not till then, will the mortality of acute appendicitis be lowered.

I felt so much on this subject that I sat down and wrote a small work on appendicitis; and I sincerely hope that when, in a few months, it is published, the lessons it tries to inculcate will not be lost on those who now rush in to operate where angels shake the head.

Yours, etc.,

W. J. STEWART MCKAY.

Lismore,
New South Wales,
January 6, 1935.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Act, 1912 and 1915*, of New South Wales, as duly qualified medical practitioners:

Fulton, John Charles, M.B., B.S., 1933 (Univ. Melbourne), Women's Hospital, Crown Street, Sydney.
Hogg, Joseph Ballantine, M.B., 1918 (Univ. Sydney), Deepwater.
Mabin, William James Richard, M.B., B.S., 1925 (Univ. Melbourne), Broken Hill.
Ross, Donald Murray, L.R.C.P. (London), M.R.C.S. (England), 1903, M.B., B.S. (Durham), 1905, F.R.C.S. (Edinburgh), 1908, District Hospital, Marrickville.

QUEENSLAND.

The undermentioned have been registered, pursuant to the provisions of *The Medical Acts, 1925 to 1933*, of Queensland, as duly qualified medical practitioners:

Horn, David, M.B., Ch.B. (Aberdeen), 1934, Toowoomba.
Horn, Ian Ross, M.B., Ch.B. (Aberdeen), 1934, Toowoomba.
McDonald, Edward Allan Fancourt, M.B., B.S., 1930 (Univ. Melbourne), M.D., 1933 (Univ. Melbourne), Toowoomba.
Ramsay-Smith, Vivian, M.B., Ch.B. (Edinburgh), 1913, Ayr.

Corrigendum.

In the announcement appearing in last week's issue in connexion with New Year honours, a mistake was made in Dr. McLeod's name. The name should be Albert Reginald McLeod. Apologies are offered to Dr. McLeod for this error.

Books Received.

ANATOMY FOR DENTAL STUDENTS. SYSTEMIC AND PRACTICAL, by Six Teachers, edited by E. P. Stibbe, F.R.C.S.; 1934. London: Edward Arnold. Demy 8vo., pp. 440, with illustrations. Price: 21s. net.

THE ETIOLOGY AND TREATMENT OF SPASMODIC BRONCHIAL ASTHMA, by H. G. Oliver, M.D., with a foreword by W. L. Brown, M.D., F.R.C.P.; 1934. London: H. K. Lewis. Demy 8vo., pp. 55, with illustrations. Price: 3s. 6d. net.

PHYSICAL DEFECTS: THE PATHWAY TO CORRECTION: A STUDY OF PHYSICAL DEFECTS AMONG SCHOOL CHILDREN IN NEW YORK CITY, CONDUCTED BY THE RESEARCH DIVISION OF THE AMERICAN CHILD HEALTH ASSOCIATION IN COOPERATION WITH THE DEPARTMENT OF HEALTH AND THE DEPARTMENT OF EDUCATION; SUPERVISED BY A SPECIAL ADVISORY COMMITTEE; AND FINANCED BY THE METROPOLITAN LIFE INSURANCE COMPANY; 1934. New York: American Child Health Association. Royal 8vo., pp. 188.

CATARRH AND THE COMMON COLD: THE TONSIL PROBLEM, by W. K. Hughes; 1934. Melbourne: Ramsay Publishing Proprietary, Limited. Demy 8vo., pp. 30, with illustrations. Price: 1s. net.

EXPERIMENTAL BACTERIOLOGY IN ITS APPLICATIONS TO THE DIAGNOSIS, EPIDEMIOLOGY AND IMMUNOLOGY OF INFECTIOUS DISEASES, by W. Kolle and H. Hetsch, translated from the seventh, completely revised German edition by D. Erikson, the English version, incorporating further revision, edited by J. Eyre, F.R.S.E., F.Z.S., M.D., M.S., D.P.H.; Volume I; 1934. London: George Allen and Unwin. Super Royal 8vo., pp. 592, with 118 plates and 200 text figures. Price: 30s. net.

ANÆSTHESIA AND ANALGESIA IN LABOUR, by K. G. Lloyd-Williams, M.D., B.S., with a foreword by L. McIlroy, D.B.E., D.Sc., M.D., M.R.C.P., F.C.O.G.; 1934. London: Edward Arnold. Crown 8vo., pp. 96, with illustrations. Price: 5s. net.

Medical Appointments.

Dr. R. H. Yeates (B.M.A.) has been appointed Government Medical Officer at Boonah, Queensland.

Dr. J. M. M. Gunson and Dr. M. T. Angel (B.M.A.) have been appointed Honorary Anæsthetists at the Adelaide Hospital, South Australia.

Dr. A. E. Platt has been appointed Deputy Director of the Laboratory of Bacteriology and Pathology at the Adelaide Hospital, South Australia.

Dr. A. W. Chalmers (B.M.A.) has been appointed Government Medical Officer at Goondiwindi, Queensland.

Dr. M. T. Cockburn (B.M.A.) has been appointed Honorary Assistant Physician to the Mareeba Babies' Hospital, South Australia.

Dr. C. A. Finlayson (B.M.A.) and Dr. J. S. Proctor (B.M.A.) have been appointed Official Visitors to the Mental Hospital at Parkside, South Australia, under the provisions of the *Mental Defectives Act, 1913*.

Dr. G. W. Barber has been appointed Medical Officer of Health by the Darling Range Road Board, Western Australia.

Dr. J. B. Birch (B.M.A.) has been appointed Government Medical Officer at Tweed Heads, New South Wales.

Dr. I. A. D. Graham (B.M.A.) has been appointed Assistant Medical Officer, Office of the Director-General of Public Health, New South Wales.

Dr. C. T. Turner (B.M.A.) has been appointed Temporary Medical Officer, Mount Gambier Hospital, South Australia.

Dr. H. G. Wallace (B.M.A.) has been appointed Senior Medical Officer of Health and Director, Division of Tuberculosis, Office of the Director-General of Public Health, New South Wales.

Dr. T. L. Dunn (B.M.A.) has been appointed Medical Officer of Health, Hunter River (Combined) District, Office of the Director-General of Public Health, New South Wales.

Dr. H. K. Denham (B.M.A.) has been appointed Medical Superintendent, Office of the Director-General of Public Health, New South Wales.

Dr. E. L. S. Morgan (B.M.A.) has been appointed Director of Maternal and Baby Welfare, Office of the Director-General of Public Health, New South Wales.

Dr. J. Sprent has been appointed a member of the Medical Council of Tasmania.

Dr. H. S. Harper (B.M.A.) has been appointed Government Medical Officer at Port Douglas, Queensland.

Dr. W. Muir (B.M.A.) has been appointed, pursuant to the provisions of the *Quarantine Act*, 1908-1924, Deputy Quarantine Officer, Fremantle, Western Australia.

Dr. E. Byron has been appointed, pursuant to the provisions of the *Quarantine Act*, 1908-1924, Quarantine Officer, Derby, Western Australia.

Dr. A. B. Cohen (B.M.A.) has been appointed, pursuant to the provisions of the *Workers' Compensation Act*, 1923, a Certifying Medical Practitioner at Brunswick, Victoria.

Dr. E. S. Morris (B.M.A.) has been appointed Inspector of Schools of Anatomy for the State of New South Wales.

Dr. R. C. Huntley (B.M.A.) has been appointed Senior Medical Officer, Office of the Director-General of Public Health, New South Wales.

Dr. H. E. H. Ferguson (B.M.A.) has been appointed Medical Officer of Health by the Subiaco Municipal Council, Western Australia.

Dr. J. D. Rice has been appointed Honorary Anaesthetist and Honorary Clinical Assistant to the Surgical Section (temporary), Adelaide Hospital, South Australia.

Dr. A. M. Myers (B.M.A.) has been appointed a Resident Medical Officer at the Adelaide Hospital, South Australia, for a further term of one year.

The undermentioned have been appointed Resident Medical Officers at the Adelaide Hospital, South Australia, for the term of one year: Dr. J. R. Barbour, Dr. P. M. Birks, Dr. A. J. Clarkson, Dr. W. P. Cleland, Dr. R. S. Day, Dr. A. Gild, Dr. J. M. J. Jens, Dr. T. D. Kelly, Dr. W. J. O'Connor, Dr. R. A. A. Pellew, Dr. L. R. West.

The undermentioned have been appointed to the Junior Resident Medical Staff of the Perth Hospital, Western Australia: Dr. J. H. Johnston, Dr. D. B. Phelan, Dr. F. H. Ebell, Dr. M. Troup, Dr. M. Lally, Dr. V. H. Webster.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xiv, xv, xvi.

AUSTIN HOSPITAL FOR CANCER AND CHRONIC DISEASES, HEIDELBERG, VICTORIA: Honorary Assistant Surgeons.
DEPARTMENT OF THE INTERIOR, CANBERRA, F.C.T.: Medical Officer.

LAUNCESTON PUBLIC HOSPITAL, LAUNCESTON, TASMANIA: Resident Medical Officers.

METROPOLITAN INFECTIOUS DISEASES HOSPITAL, NORTHFIELD, SOUTH AUSTRALIA: Resident Medical Superintendent.
PUBLIC SERVICE BOARD, ADELAIDE, SOUTH AUSTRALIA: Medical Officers.

ROYAL AUSTRALIAN NAVY: Medical Officers.

ROYAL NORTH SHORE HOSPITAL OF SYDNEY, NEW SOUTH WALES: Junior Resident Medical Officers.

SYDNEY HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Relieving Assistant Physician.

THE AUSTRALIAN INLAND MISSION, SYDNEY, NEW SOUTH WALES: Medical Officer.

THE RACHEL FORSTER HOSPITAL FOR WOMEN AND CHILDREN, SYDNEY, NEW SOUTH WALES: Medical Officers (female).

VICTORIAN EYE AND EAR HOSPITAL, MELBOURNE, VICTORIA: Resident Surgeons, Post-Graduates.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associate Friendly Societies' Medical Institute. Chillagoe Hospital. Members accepting LODGE appointment and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	Officer of Health, District Council of Elliston. All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor", THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £3 for Australia and £2 5s. abroad per annum payable in advance.